



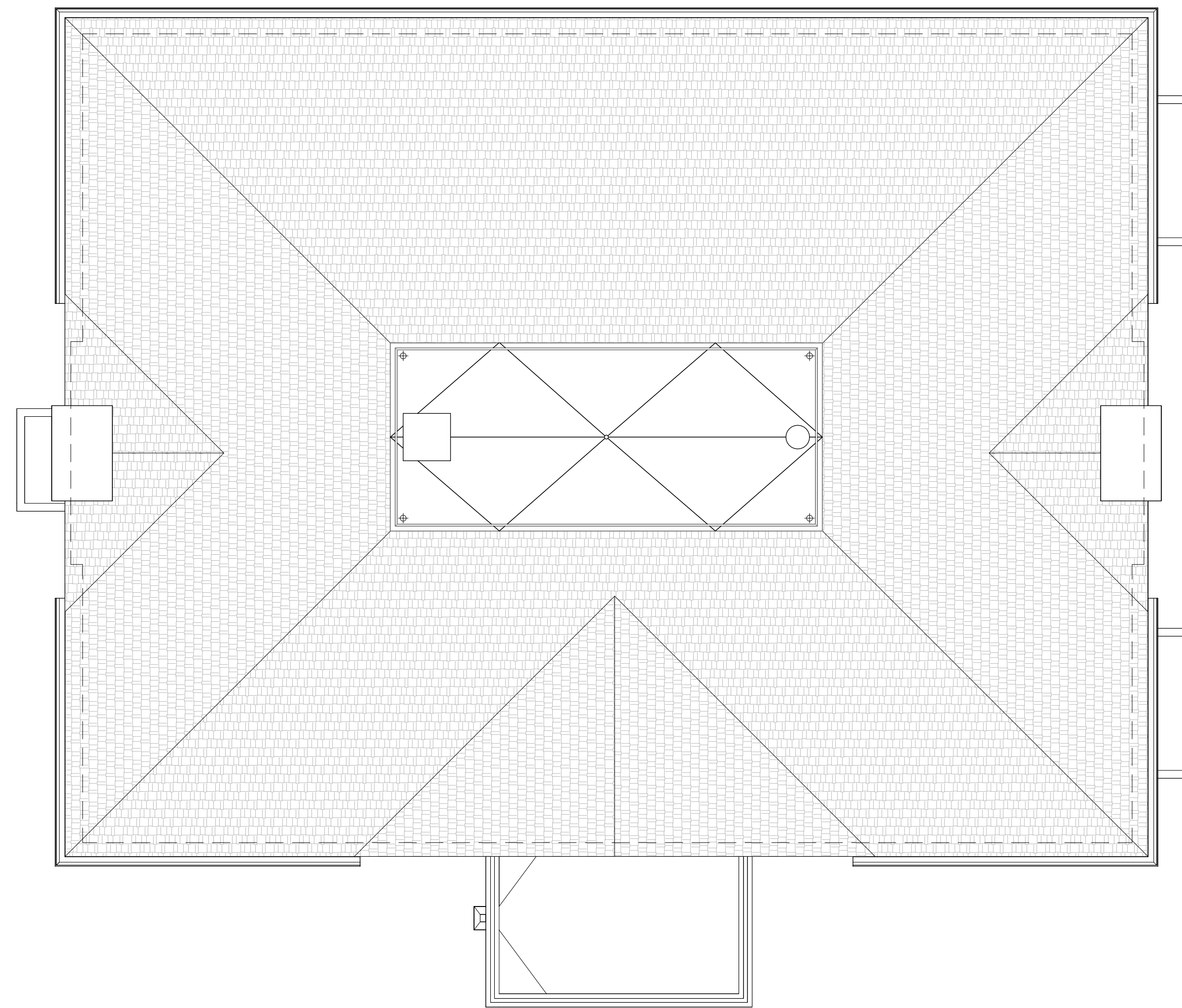
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# PUBLIC RELATIONS ROOF - USU DESIGN DEVELOPMENT SET

UTAH STATE UNIVERSITY  
PROJECT NUMBER: #24265



PUBLIC RELATIONS ROOF - USU

PUBLIC RELATIONS  
LOGAN, UT 84321  
PERMIT SET

JOB NUMBER: 24265  
OWNER: UTAH STATE UNIVERSITY  
DATE: 12/19/2024

REV DATE DESCRIPTION

## ARCHITECTURE

UNCOMMON ARCHITECTS  
684 W Center St Midvale UT 84047

MICHELLE MACDONNELL  
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michelle@uncommonarch.com

## CIVIL

FORSGRN ASSOCIATES, INC.  
95 W 100 S, Suite 115, Logan, UT  
84321

CRAIG RASMUSSEN  
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crasmussen@forsgren.com

## ELECTRICAL

SPECTRUM ENGINEERS  
324 S State St Suite 400, Salt Lake  
City, UT 84111

MATT HAVERKAMP, P.E.  
(801) 328-5151  
Matt.Haverkamp@speceng.com

COVER

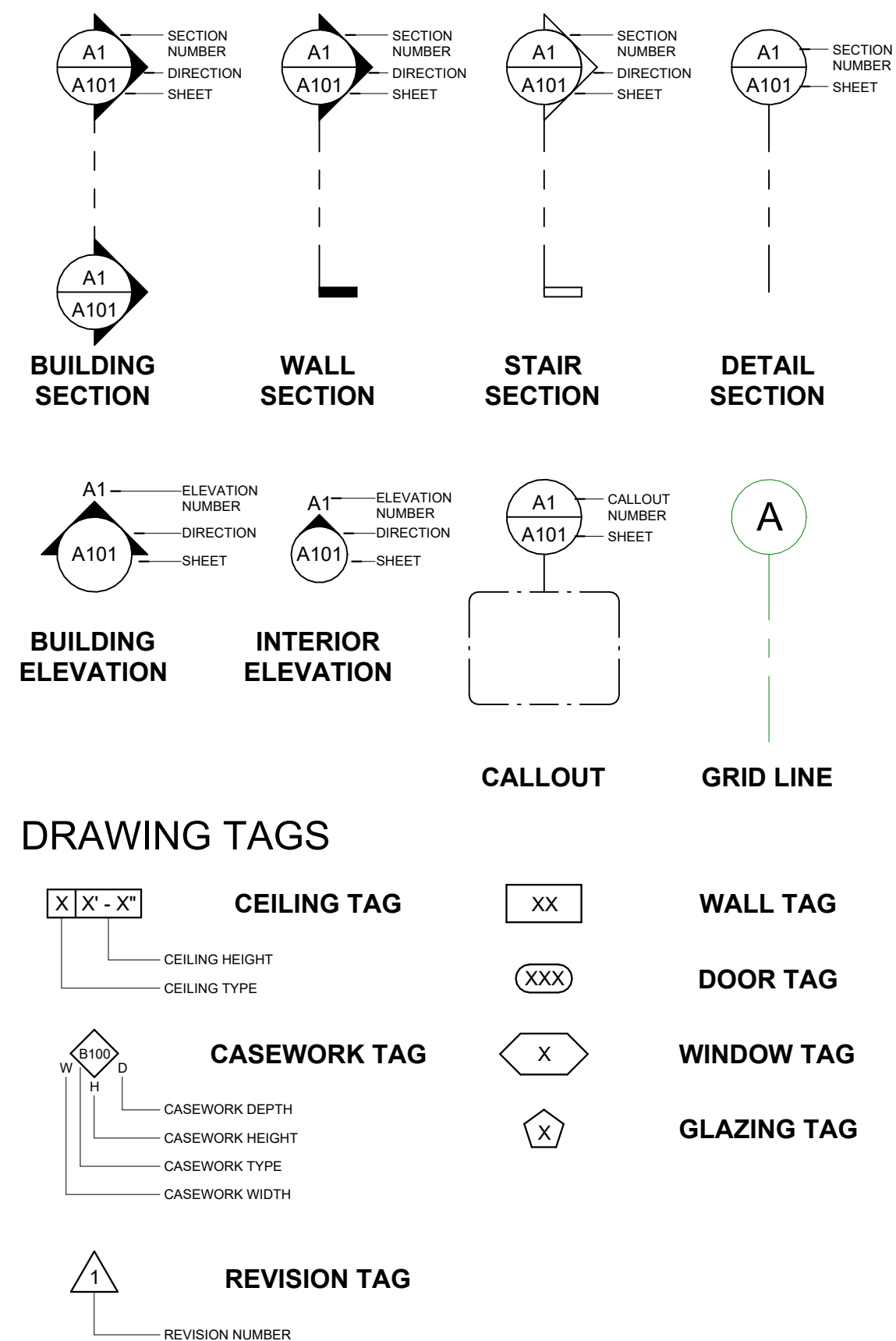
# CV

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### ABBREVIATIONS

&	AND	JST	JOIST
@	AT		
°	DEGREES	MAX	MAXIMUM
∅	DIAMETER	MDF	MEDIUM DENSITY FIBERBOARD
		MECH	MECHANICAL
ACT	ACOUSTIC CEILING TILE	MEZZ	MEZZANINE
AFF	ABOVE FINISH FLOOR	MFR	MANUFACTURER
ALT	ALTERNATE	MIN	MINIMUM
ALUM	ALUMINUM	MIR	MIRROR
APPROX	APPROXIMATE	MO	MASONRY OPENING
ARCH	ARCHITECTURAL	MTL	METAL
BD	BOARD	N	NORTH
BLDG	BUILDING	NIC	NOT IN CONTRACT
B.O.	BOTTOM OF	NO	NUMBER
		NOM	NOMINAL
CAB	CABINET	NRC	NOISE REDUCTION COEFFICIENT
CG	CORNER GUARD	NTS	NOT TO SCALE
CJ	CONTROL JOINT		
CL	CENTER LINE	OC	ON CENTER
CLG	CEILING	OD	OUTSIDE DIAMETER
CLR	CLEAR	OH	OVERHEAD
CM	CONSTRUCTION MANAGER	OPG	OPENING
COL	COLUMN	OPP	OPPOSITE
CONC	CONCRETE	OSB	ORIENTED STRAND BOARD
CONT	CONTINUOUS	PERI	PERI
CORR	CORRIDOR	PERM	PERMANENT
CMU	CONCRETE MASONRY UNIT	PL	PLATE
CPT	CARPET	PLAM	PLASTIC LAMINATE
CSBA	COLOR SELECTED BY ARCH	PNL	PANEL
CT	CERAMIC TILE	PNT	PAINT
		P.O.	POINT OF
D	DEPTH	PART	PARTITION
DB	DECK BEARING	PLY	PLYWOOD
DBL	DOUBLE		
DEPT	DEPARTMENT	QT	QUARRY TILE
DF	DRINKING FOUNTAIN		
DIM	DIMENSION	R/RAD	RADIUS
DN	DOWN	ROP	REFLECTED CEILING PLAN
DRN	DRAIN	REC	RECESSED
DT/DET	DETAIL	REF	REFERENCE
DWG	DRAWING	REINF	REINFORCED
		REQD	REQUIRED
E	EAST	RM	ROOM
EA	EACH	RO	ROUGH OPENING
EIFS	EXTERIOR INSULATION SYSTEM		
EJ	EXPANSION JOINT	S	SOUTH
ELEC	ELECTRICAL	SCHED	SCHEDULE
ELEV	ELEVATION	SECT	SECTION
EQ	EQUAL	SF	SQUARE FOOT
EQUIP	EQUIPMENT	SIM	SIMILAR
EXIST(E)	EXISTING	SPEC	SPECIFICATION
EXP	EXPANSION	SS	STAINLESS STEEL
EXT	EXTERIOR	STC	SOUND TRANSMISSION CLASS
		STD	STANDARD
FA	FIRE ALARM	STL	STEEL
FD	FLOOR DRAIN	STOR	STORAGE
FDN	FOUNDATION	STRUC	STRUCTURAL
FE	FIRE EXTINGUISHER	SUSP	SUSPENDED
FG	FINISH GRADE	SYS	SYSTEM
FH	FIRE HYDRANT		
FIN	FINISHED	T	THICKNESS
FLR	FLOOR	T & B	TOP AND BOTTOM
F.O.	FACE OF	T & G	TONGUE AND GROOVE
FTG	FOOTING	TBD	TO BE DETERMINED
FV	FIELD VERIFY	TEMP	TEMPORARY
		THRU	THROUGH
GA	GAUGE	T.O.	TOP OF
GALV	GALVANIZED	TS	TUBE STEEL
GC	GENERAL CONTRACTOR	TYP	TYPICAL
GFRC	GLASS FIBER REINF PANEL		
GYP	GYPSUM	UNO	UNLESS NOTED OTHERWISE
GWB	GYPSUM WALLBOARD		
HDW	HARDWARE	VAR	VARIES
HDF	HIGH DENSITY FIBERBOARD	VCT	VINYL COMPOSITION TILE
HM	HOLLOW METAL	VERT	VERTICAL
H	HEIGHT	VEST	VESTIBULE
HOR	HORIZONTAL		
		W	WEST
ID	INNER DIAMETER	W	WIDTH
INT	INTERIOR	WI	WITH
INSUL	INSULATE	WC	WATER CLOSET
		WD	WOOD
		W/O	WITHOUT
		WWF	WELDED WIRE FABRIC

### SYMBOL LEGEND



### DRAWING TAGS

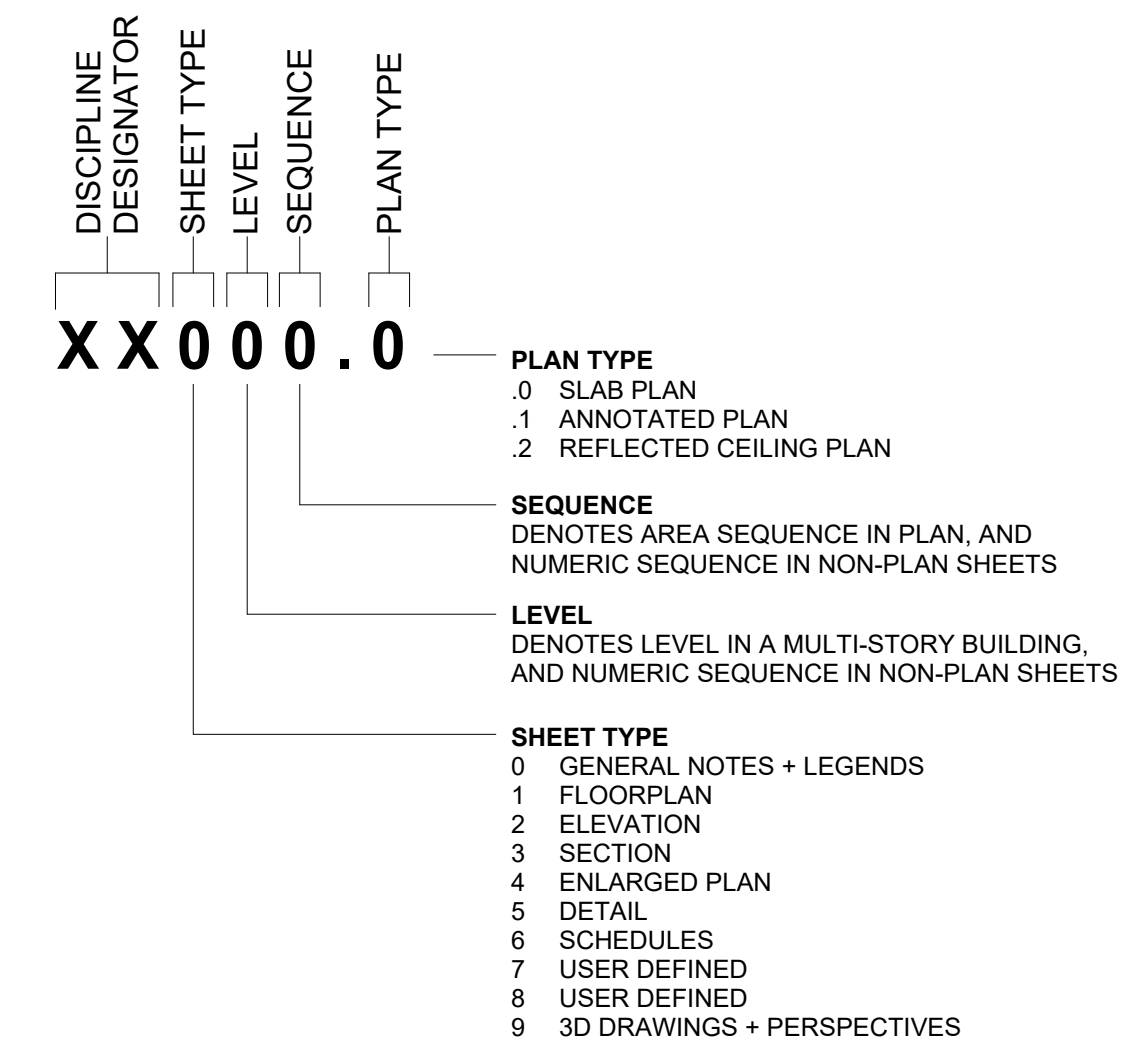
### GENERAL NOTES

- IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW AND COORDINATE THE WORK OF ALL SUB-CONTRACTORS, TRADES AND SUPPLIERS WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS BEFORE COMMENCING CONSTRUCTION, AND TO ASSURE THAT ALL PARTIES ARE AWARE OF ALL REQUIREMENTS, REGARDLESS OF WHERE THE REQUIREMENTS OCCUR IN THE CONTRACT DOCUMENTS, WHICH MIGHT AFFECT THE WORK OF THAT PARTY.
- AS PART OF THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE WORK OF ALL SUB-CONTRACTORS, TRADES AND SUPPLIERS, THE CONTRACTOR SHALL ENDEAVOR TO IDENTIFY AND NOTIFY THE ARCHITECT OF ANY CONFLICTS BETWEEN THE WORK OF DIFFERENT PARTIES AT THE EARLIEST POSSIBLE DATE. ALL DEVIATIONS FROM THE CONTRACT DOCUMENTS MUST BE APPROVED IN ADVANCE BY THE ARCHITECT.
- THE ARCHITECTURAL DRAWINGS ESTABLISH THE FINISHED APPEARANCE AND LOCATION OF EXPOSED ELEMENTS OF THE WORK OF ALL THE TRADES, INCLUDING THAT WORK WHICH IS ILLUSTRATED PRIMARILY ON DRAWINGS OF OTHER DISCIPLINES.
- DO NOT SCALE DRAWINGS. ALL NECESSARY DIMENSIONS ARE NOTED, OR MAY BE DERIVED FROM THOSE NOTED, IN THE CONSTRUCTION DOCUMENTS. IF DIMENSIONS ARE NOT PRESENT, THE ARCHITECT IS TO BE NOTIFIED.
- VERIFY THAT ALL WORK CONFORMS WITH THE GOVERNING BUILDING CODES LISTED ON THIS SHEET, AS WELL AS THE REQUIREMENTS AND REGULATIONS OF THE LOCAL MUNICIPALITY.
- CONTRACTOR IS RESPONSIBLE FOR CORRECTION OF WORK AT HIS OWN EXPENSE FOR WORK WHICH DOES NOT COMPLY WITH THESE DOCUMENTS.
- PROVIDE NECESSARY STIFFENERS, BLOCKING, BRACING, HANGERS, ETC. FOR ALL CABINETS, EQUIPMENT, FURNISHINGS, TOWEL BARS OR OTHER ITEMS.
- FLASHING AND COUNTER FLASHING IS TO BE PROVIDED AT ALL NECESSARY LOCATIONS IN ACCORDANCE WITH BUILDING CODE AND BEST CONSTRUCTION PRACTICES. THESE LOCATIONS INCLUDE, BUT ARE NOT LIMITED TO, THE CONNECTION OF A ROOF WITH A VERTICAL SURFACE, EXTERIOR OPENINGS, IN-PLANE MATERIAL CHANGES, ROOF VALLEYS AND RIDGES, CONNECTIONS BETWEEN HORIZONTAL AND VERTICAL SURFACES, ETC.
- WOOD FRAMING MEMBERS IN CONTACT WITH CONCRETE SHALL BE PRESSURE TREATED WOOD.

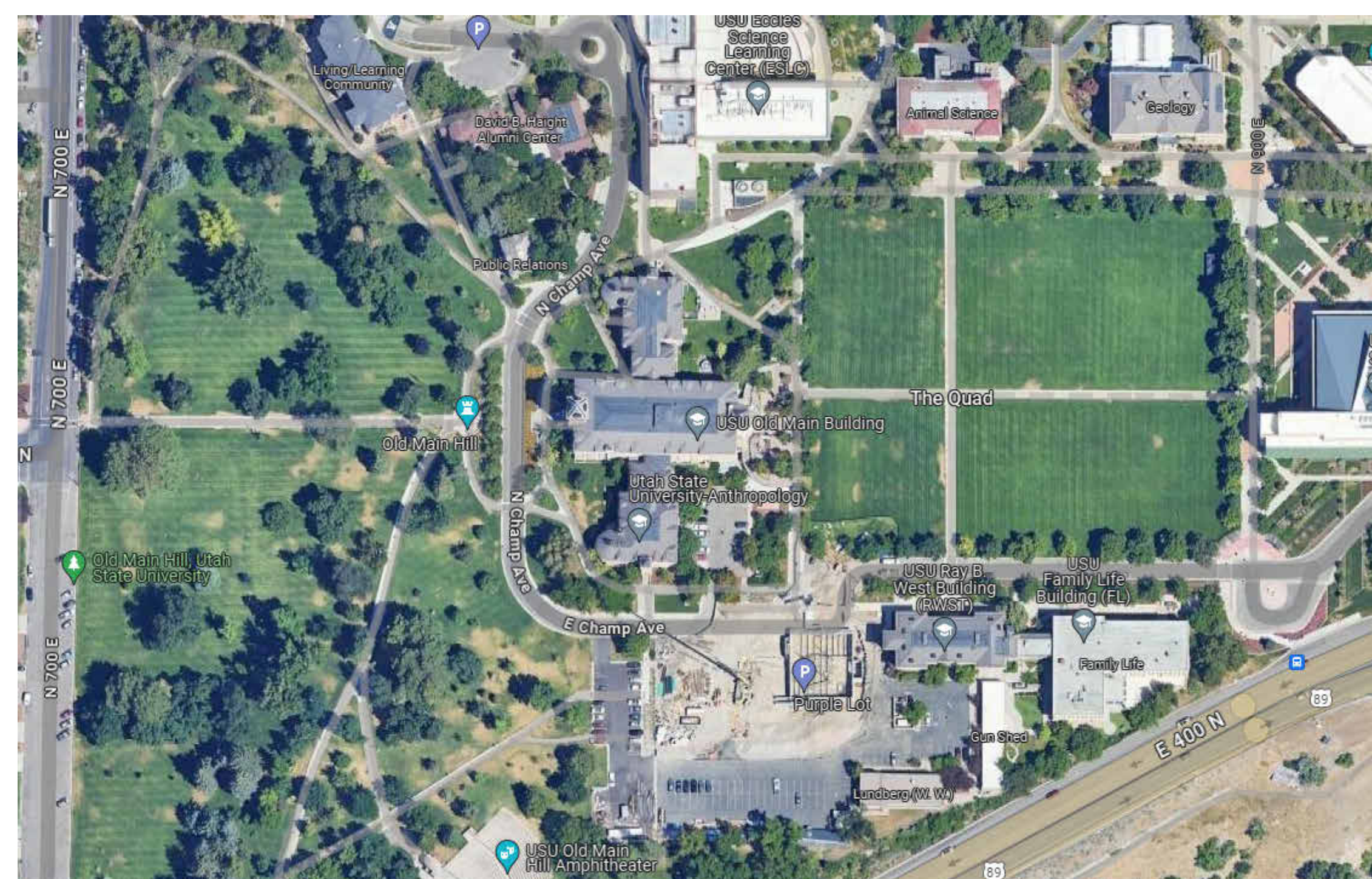
### SHEET INDEX

GENERAL	
CV	COVER
G001	GENERAL INFORMATION + INDEX
G002	SPECIFICATIONS
G003	SPECIFICATIONS
G004	SPECIFICATIONS
CIVIL	
C100	CIVIL PLAN
ARCHITECTURAL SITE	
AS101	OVERALL PLAN - SITE
ARCHITECTURAL	
A190	OVERALL ROOF PLAN - LEVEL 01
A551	PHOTO DETAILS
A560	ROOF DETAIL
ELECTRICAL	
EE001	ELECTRICAL COVER SHEET
EE002	ELECTRICAL NARRATIVE
EE003	ELECTRICAL SPECIFICATIONS
EE501	ELECTRICAL DETAILS
EP102	LEVEL 2 POWER PLAN
EP103	ROOF POWER PLAN
Grand total:	16

### SHEET NAME + NUMBER



### VICINITY MAP



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PUBLIC RELATIONS ROOF - USU  
PUBLIC RELATIONS  
LOGAN, UT 84321  
PERMIT SET

JOB NUMBER: 24265  
OWNER: UTAH STATE UNIVERSITY  
DATE: 12/19/2024

REV DATE DESCRIPTION

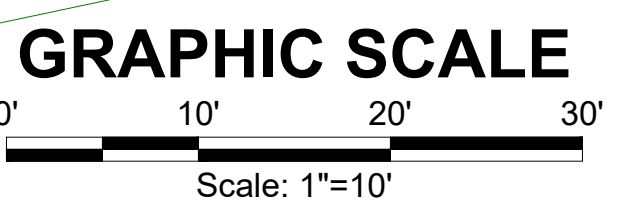
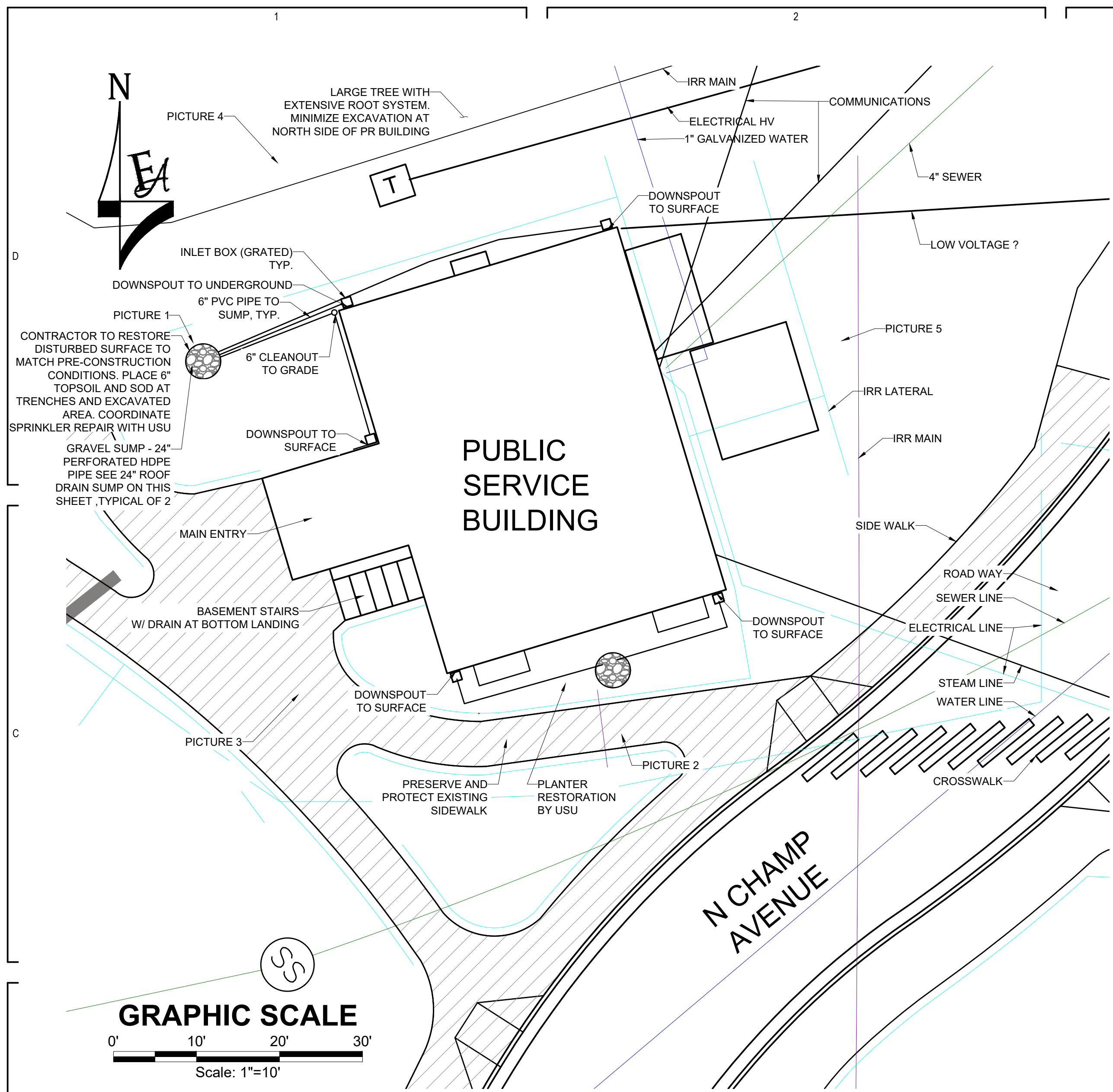
GENERAL INFORMATION + INDEX

G001









**GENERAL NOTES:**

1. COORDINATE SUMP PLACEMENT WITH USU LOAM MANAGER.
2. COORDINATE BLUE STAKING OF UTILITIES AND KNOWN UNDERGROUND SYSTEMS PRIOR TO EXCAVATION.
3. PROTECT AND PRESERVE EXISTING TREES UNLESS NOTED OTHERWISE. DO NOT CUT ROOTS 2" DIAMETER OR GREATER. IF ENCOUNTERED CONTACT USU FOR DIRECTION.
4. CONTRACTOR TO PROTECT EXISTING SIDEWALK. IF DAMAGED, SIDEWALK TO BE REPLACED WITH USU APPROVED MIX DESIGN AT CONTRACTOR'S SOLE EXPENSE.
5. PROTECT WORK AREA IN ACCORDANCE WITH USU STANDARDS, INCLUDING BUT NOT LIMITED TO TRAFFIC CONTROL, FENCING AROUND WORK AREA, AND PROVIDING FLAGGERS AS MAY BE NEEDED. WORK AREA TO BE PROTECTED FOR THE FULL DURATION OF THE PROJECT.



PICTURE 1



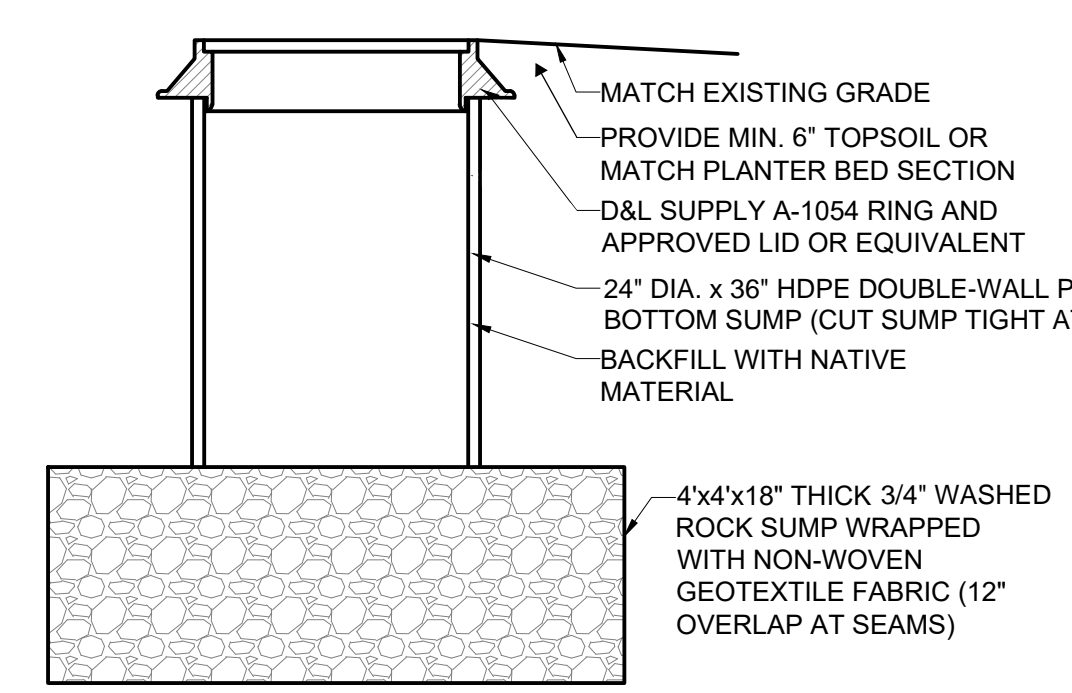
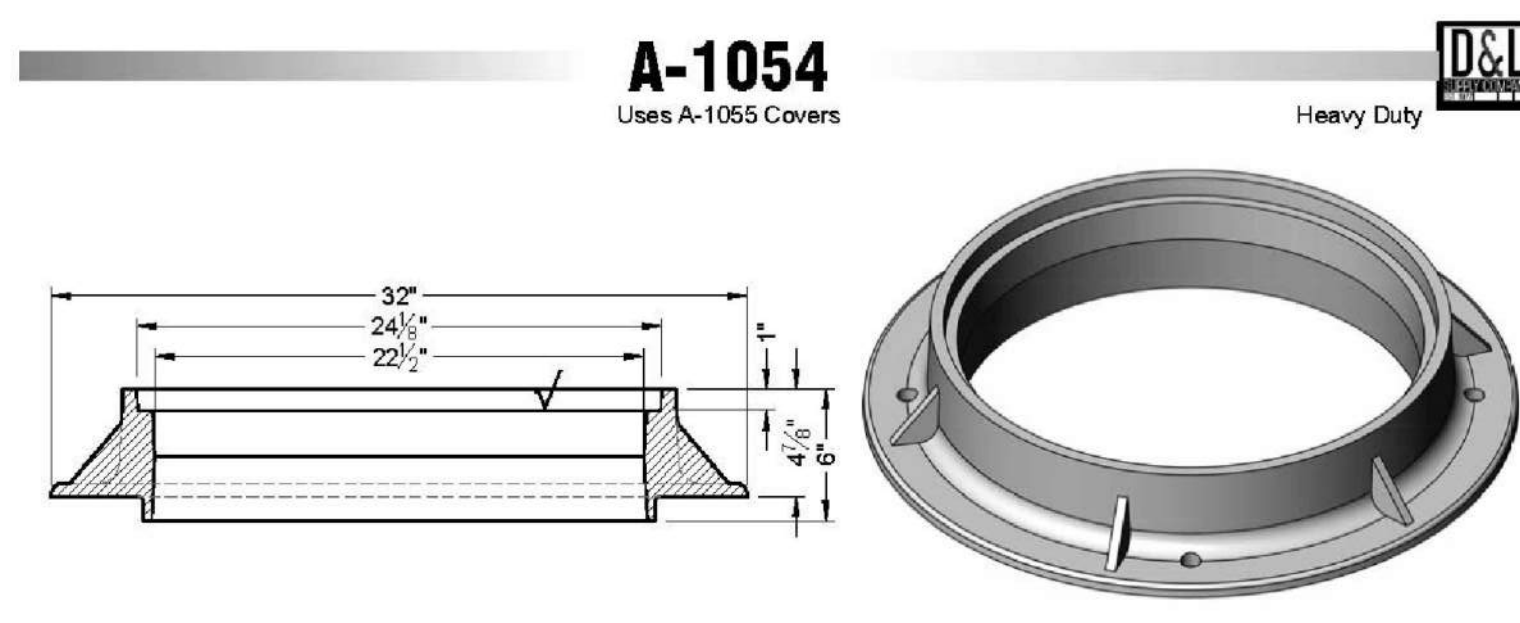
PICTURE 2



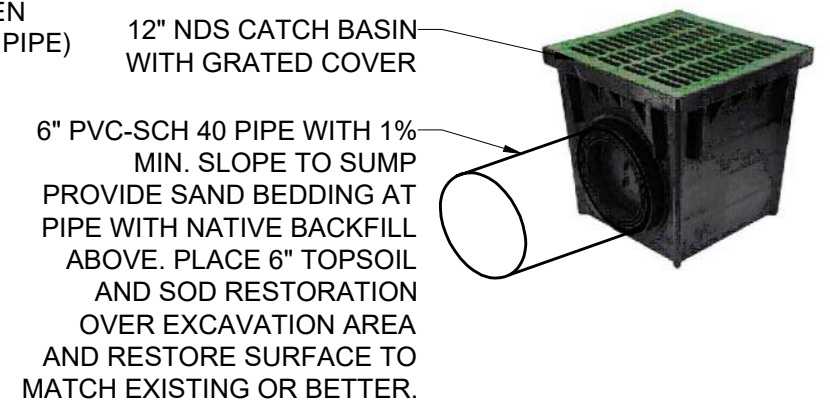
PICTURE 3



PICTURE 4



24" DIAMETER ROOF DRAIN SUMP  
SCALE: 3/4"=1'-0"



CATCH BASIN  
SCALE: 3/4"=1'-0"



PICTURE 5



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PUBLIC RELATIONS ROOF - USU

PUBLIC RELATIONS  
LOGAN, UT 84321  
SCHEMATIC DESIGN

JOB NUMBER:	24265	
OWNER:	UTAH STATE UNIVERSITY	
DATE:	OCT 2024	
REV	DATE	DESCRIPTION

FORSGREN Associates, Inc.

CIVIL PLAN

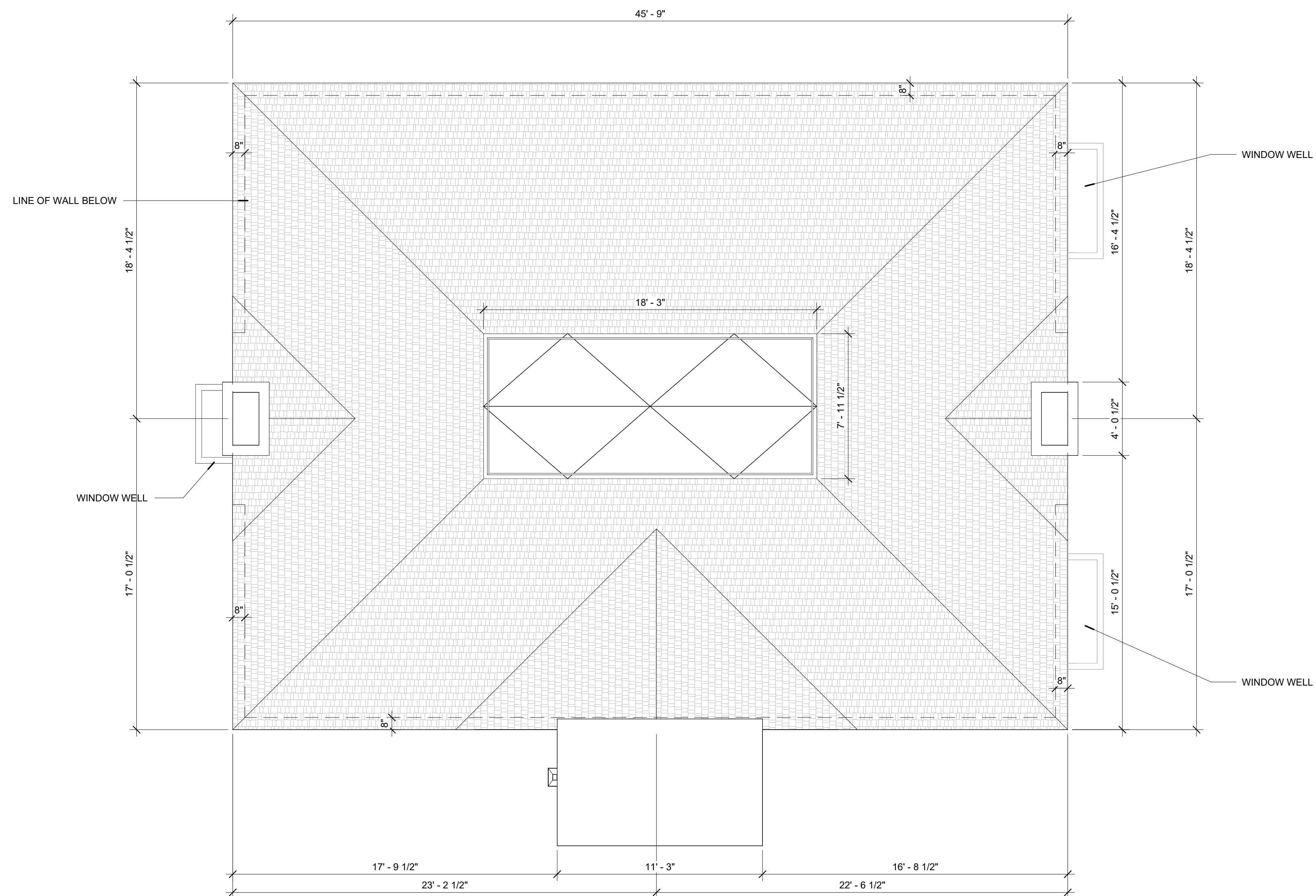
**C100**

10/4/2024 9:12:31 AM



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**A1** PLAN - SITE - OVERALL  
1/4" = 1'-0"

**PUBLIC RELATIONS ROOF - USU**

PUBLIC RELATIONS  
LOGAN, UT 84321  
PERMIT SET

JOB NUMBER: 24265  
OWNER: UTAH STATE UNIVERSITY  
DATE: 12/19/2024

REV	DATE	DESCRIPTION

OVERALL PLAN -  
SITE

**AS101**

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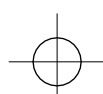
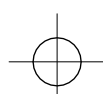


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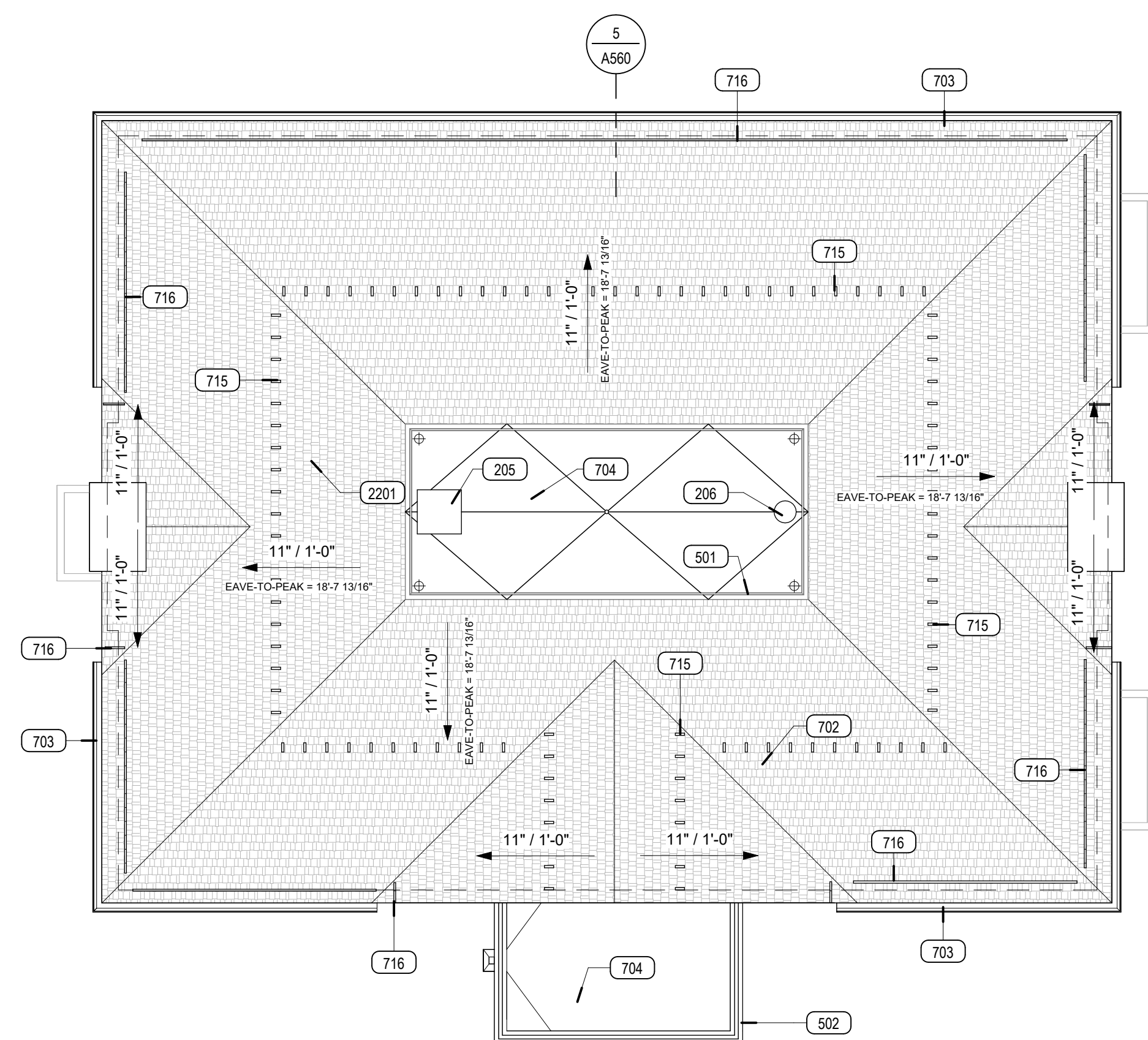


### GENERAL NOTES

1. PLAN INDICATES MAJOR ROOF PENETRATIONS, THIS DOES NOT REPRESENT ALL PENETRATIONS BY ALL UTILITIES.
2. CRICKET RIDGES TO RUN FLAT. CRICKETS TO BE SLOPED AT 1/4" PER FOOT MIN. CRICKETS AT EQUIPMENT TO BE AS REQUIRED TO MAINTAIN 1/4" PER FOOT SLOPE. EQUIPMENT LESS THAN 24" WIDE TO HAVE A 4" CANT STRIP ONLY AND NO CRICKET. CRICKETS ARE TO BE FORMED BY TAPERED ROOF INSULATION.
3. PROVIDE CAULKING AT ALL DISSIMILAR MATERIAL CONNECTIONS.
4. PROVIDE ELECTROLYSIS SEPARATION BETWEEN ALL DISSIMILAR METALS AS REQUIRED.
5. SEE TYPICAL PIPE PENETRATION DETAILS D5/A-502.
6. SINGLE PLY MEMBRANE (EPDM) IS INDICATED BY THE FOLLOWING SYMBOL: 
7. DAVINCI ROOFSCAPES, ENGINEERED POLYMER, SHINGLES HAVING A CLASS A FIRE RESISTANCE INDICATED BY THE FOLLOWING SYMBOL: 
8. DETACH, LIFT, RE-ATTACH ALL MECHANICAL EQUIPMENT, VENTS ETC. TO ALLOW FOR PROPER DETAILING OF CURBS AND ROOF SYSTEMS.
9. UPON REMOVAL OF EXISTING ROOFING SYSTEMS, CONTRACTOR TO REPAIR ROOF DECK BELOW AS REQUIRED PRIOR TO RE-ROOFING.
10. ALL WOOD NAILERS, CURBS, BLOCKING & ETC TO BE REPLACED WITH PRESSURE TREATED WOOD. REPAIR OR REPLACE OTHER BACKING AS REQUIRED TO ALLOW FOR SOLID ATTACHEMENT TO ROOFING SYSTEM OR METAL FLASHING.
11. MIN. ROOF SLOPE SHALL BE 1/4" PER FOOT. 
12. LANYARD TIE - OFF ANCHOR: CB-18 FALL PROTECTION ANCHOR POINT INDICATED BY THE FOLLOWING SYMBOL: 

### KEYED NOTE

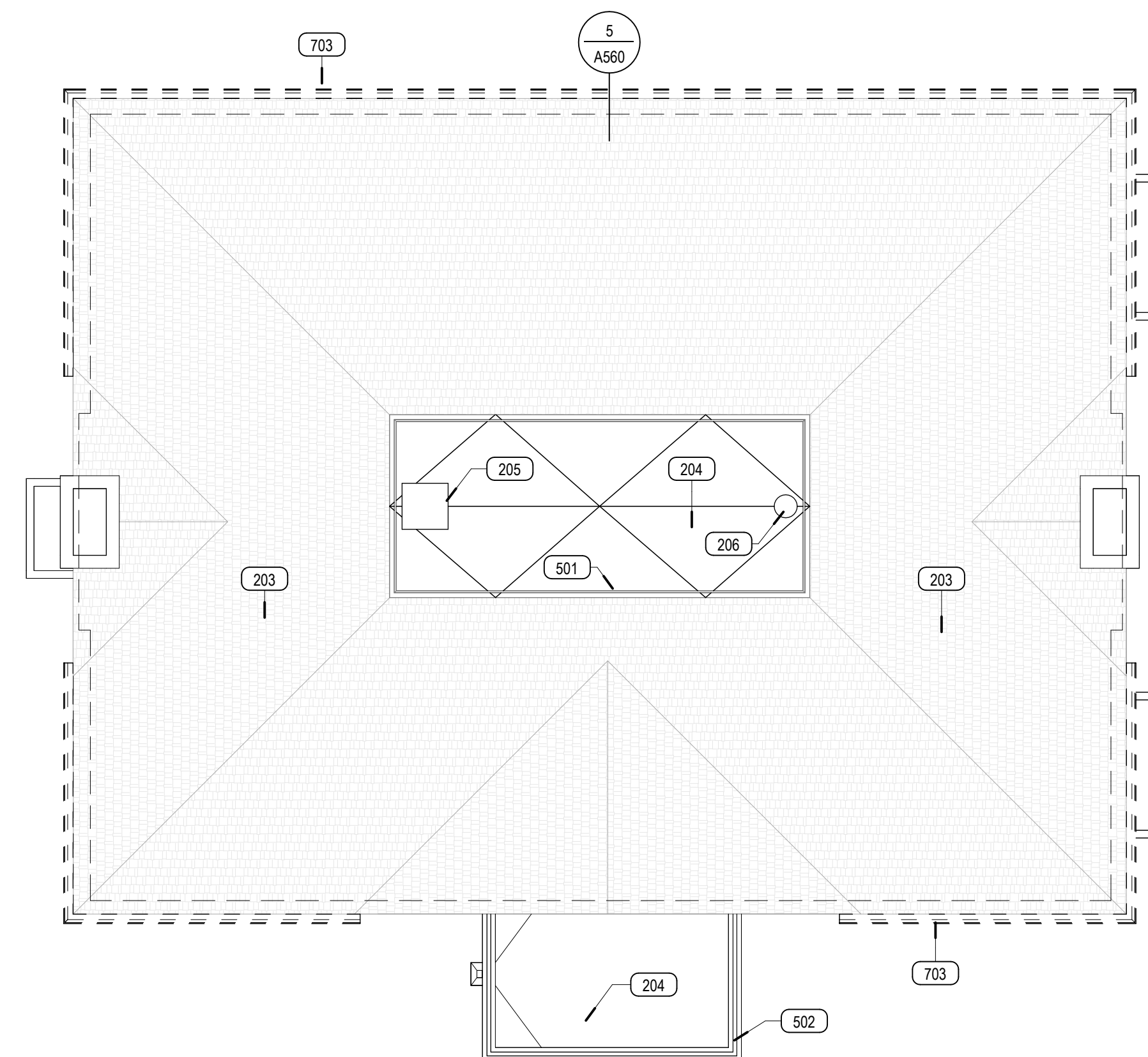
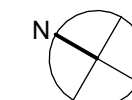
- 203 REMOVE AND REPLACE EXISTING ROOF MATERIAL. PATCH AND REPAIR UNDERLAYMENT AS NEEDED. PREP FOR NEW ROOFING MATERIAL.
- 204 REMOVE AND REPLACE EXISTING FLAT ROOF MATERIAL. PATCH AND REPAIR UNDERLAYMENT AS NEEDED. PREP FOR NEW ROOFING MATERIAL.
- 205 EXISTING MECHANICAL EQUIPMENT. RETAIN AND PROTECT DURING CONSTRUCTION.
- 206 EXISTING PIPE. RETAIN AND PROTECT DURING CONSTRUCTION.
- 501 DECORATIVE IRON RAILING. REPLACE AS NEEDED. MATCH EXISTING.
- 502 EXISTING GUARDRAIL. REPLACE AS NEEDED. MATCH EXISTING.
- 702 INSTALL DAVINCI FANCY SHAKES ROOFING MATERIAL. PATCH AND REPAIR EXISTING UNDERLAYMENT AS NEEDED. INSTALL SNOW CLIPS AND RAILS AROUND PERIMETER OF SLOPED ROOF.
- 703 REMOVE AND REPLACE EXISTING GUTTERS AND DOWNSPOUTS. REPLACE HEAT TRACE CABLES IN DOWNSPOUTS.
- 704 INSTALL PVC SINGLE-PLY MEMBRANE OVER RIGID POLYISO INSULATION. INSTALL INSULATION AS REQUIRED TO ACHIEVE A MINIMUM OF 1/4" PER FOOT SLOPE.
- 715 SNOW GUARD.
- 716 POWDER COATED SNOW FENCE SYSTEM.
- 2201 ROOF OVERFLOW DRAIN LOCATION. SEE PLUMBING PLANS.



NOTE:  
EAVE TOTAL LENGTH = 182'-01/8"

**1** OVERALL ROOF PLAN

3/16" = 1'-0"



NOTE:  
EAVE TOTAL LENGTH = 182'-01/8"

**2** DEMOLITION ROOF PLAN

3/16" = 1'-0"



PUBLIC RELATIONS ROOF - USU

PUBLIC RELATIONS  
LOGAN, UT 84321  
PERMIT SET

JOB NUMBER: 24265  
OWNER: UTAH STATE UNIVERSITY  
DATE: 12/19/2024

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OVERALL ROOF  
PLAN - LEVEL 01

**A190**

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PUBLIC RELATIONS ROOF - USU

PUBLIC RELATIONS  
LOGAN, UT 84321  
PERMIT SET

JOB NUMBER: 24265  
OWNER: UTAH STATE UNIVERSITY  
DATE: 12/19/2024

REV DATE DESCRIPTION

PHOTO DETAILS

**A551**



C1 PHOTO DETAIL

C1 PHOTO DETAIL

C1 PHOTO DETAIL



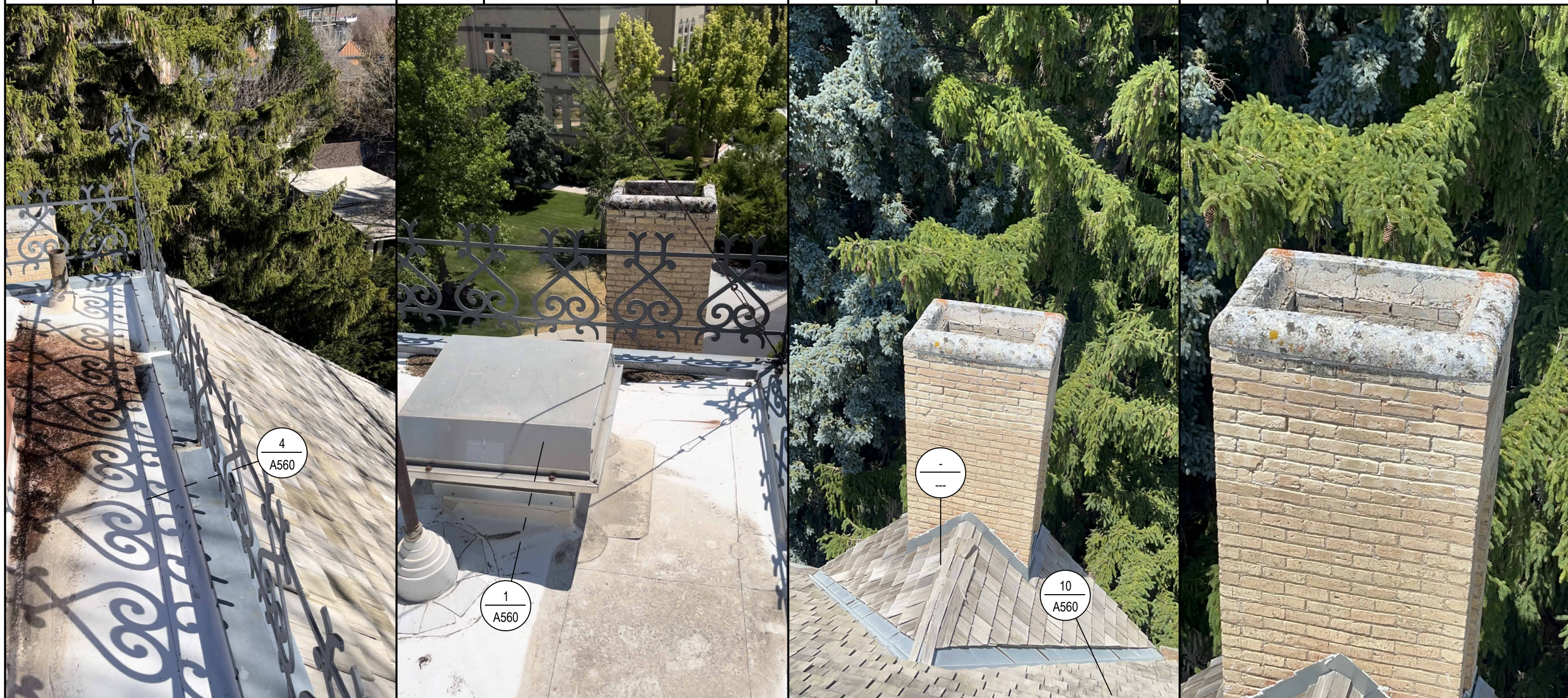
B1 PHOTO DETAIL

B2 PHOTO DETAIL

B3 PHOTO DETAIL

B4 PHOTO DETAIL

B5 PHOTO DETAIL



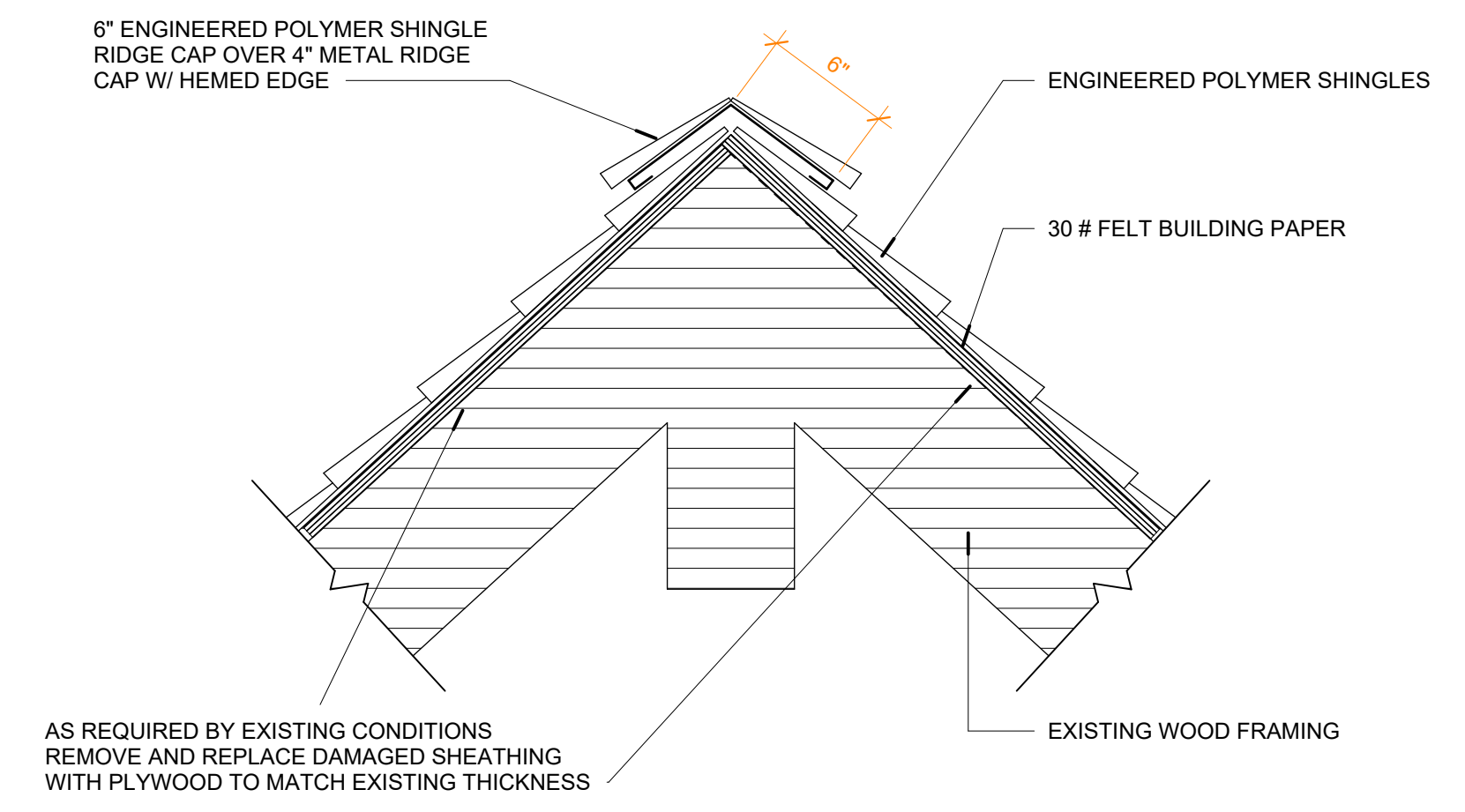
A1 PHOTO DETAIL

A2 PHOTO DETAIL

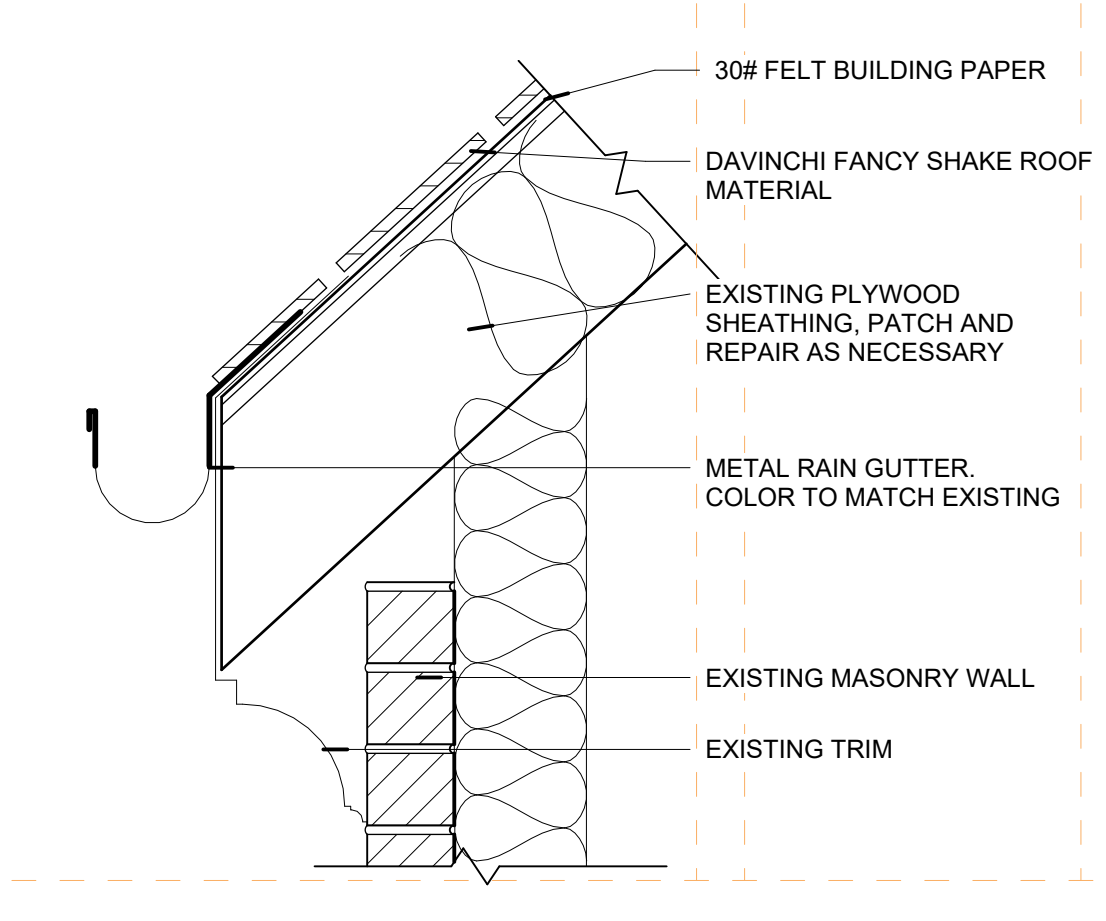
A3 PHOTO DETAIL

A4 PHOTO DETAIL

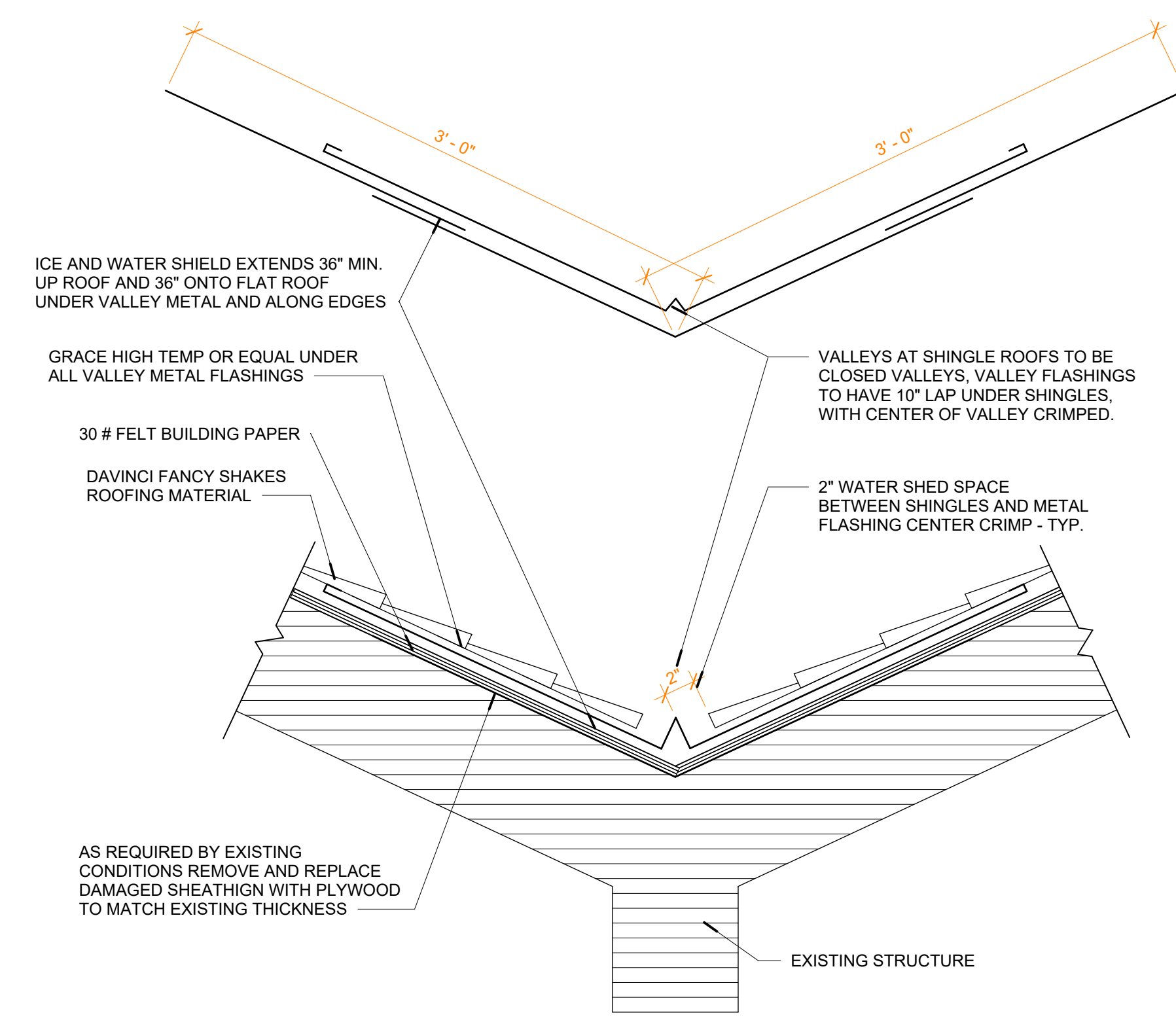
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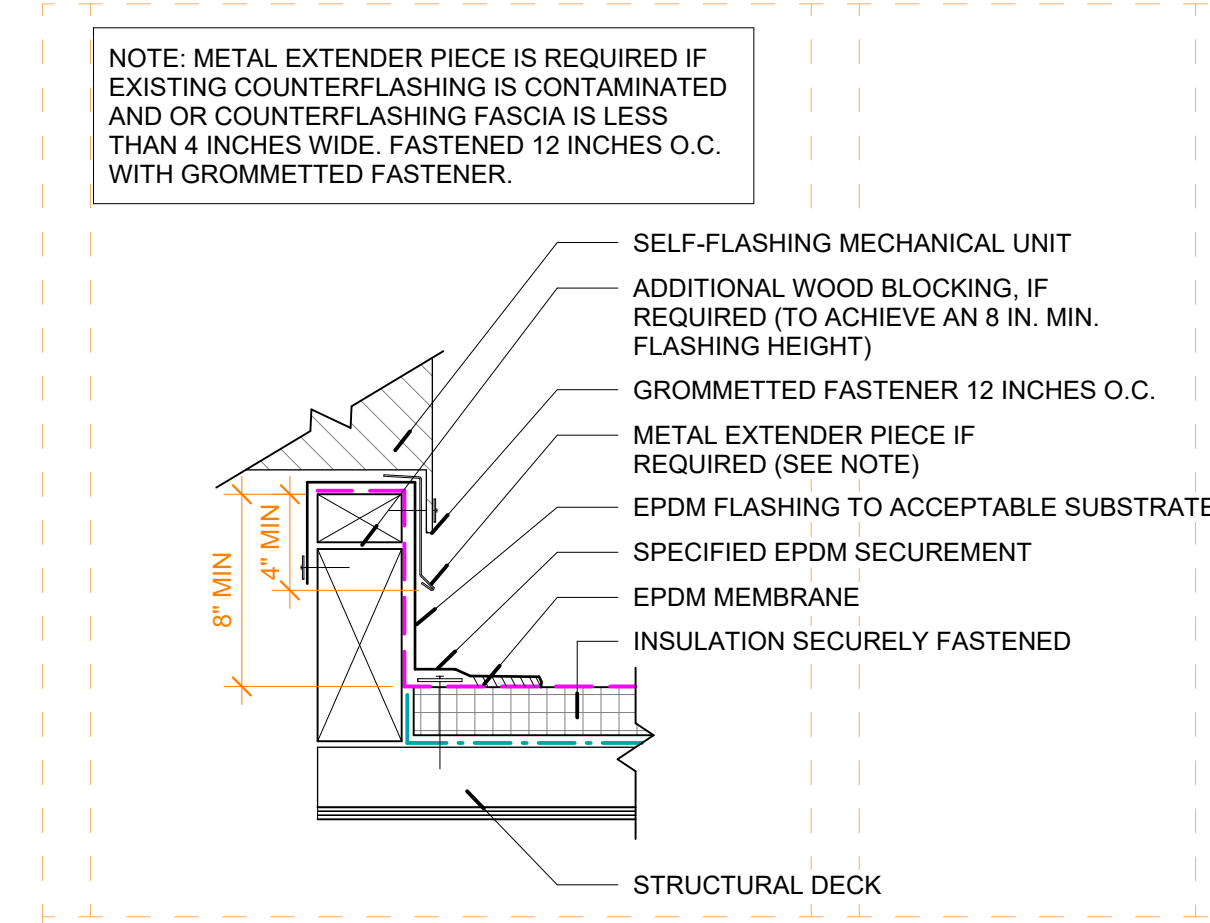
**9 RIDGE / HIP DETAIL**  
1 1/2" = 1'-0"



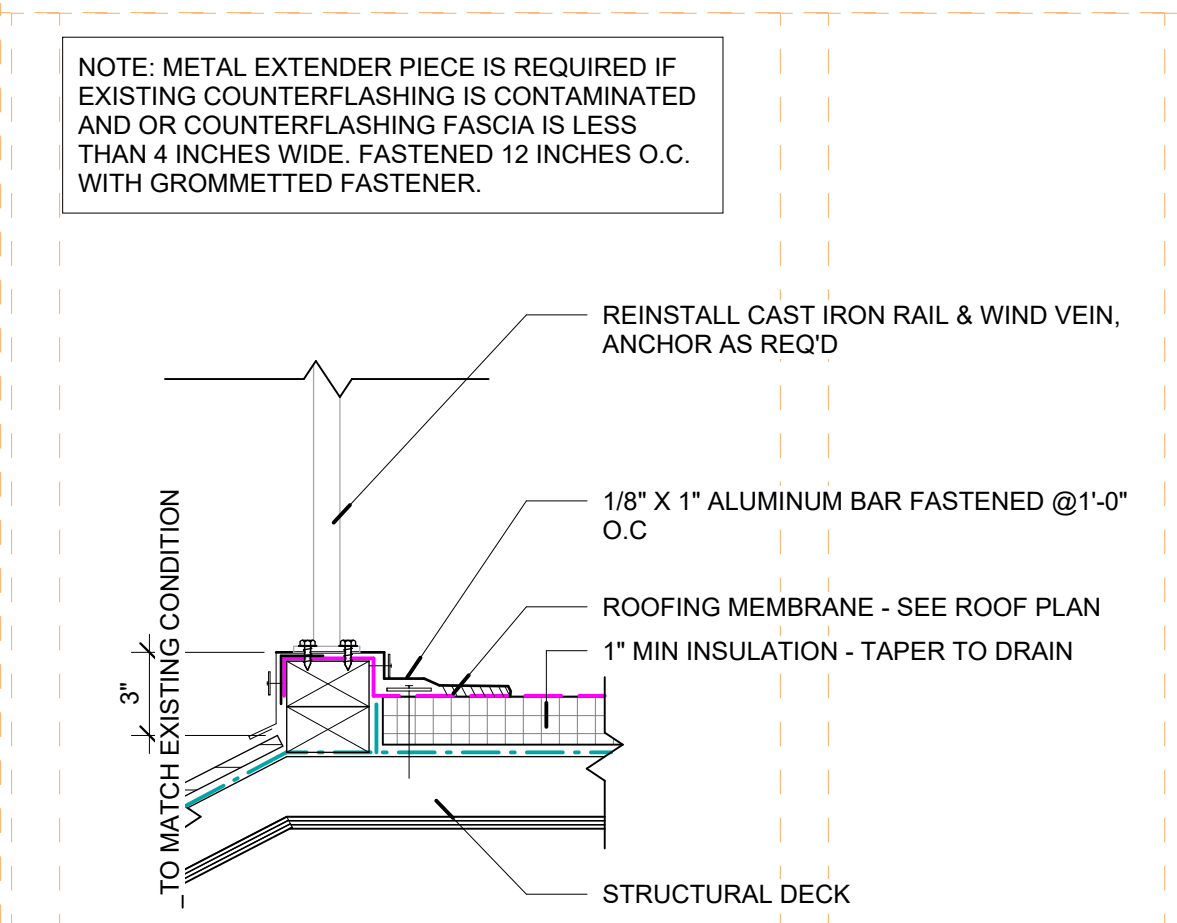
**5 RAIN GUTTER DETAIL**  
1 1/2" = 1'-0"



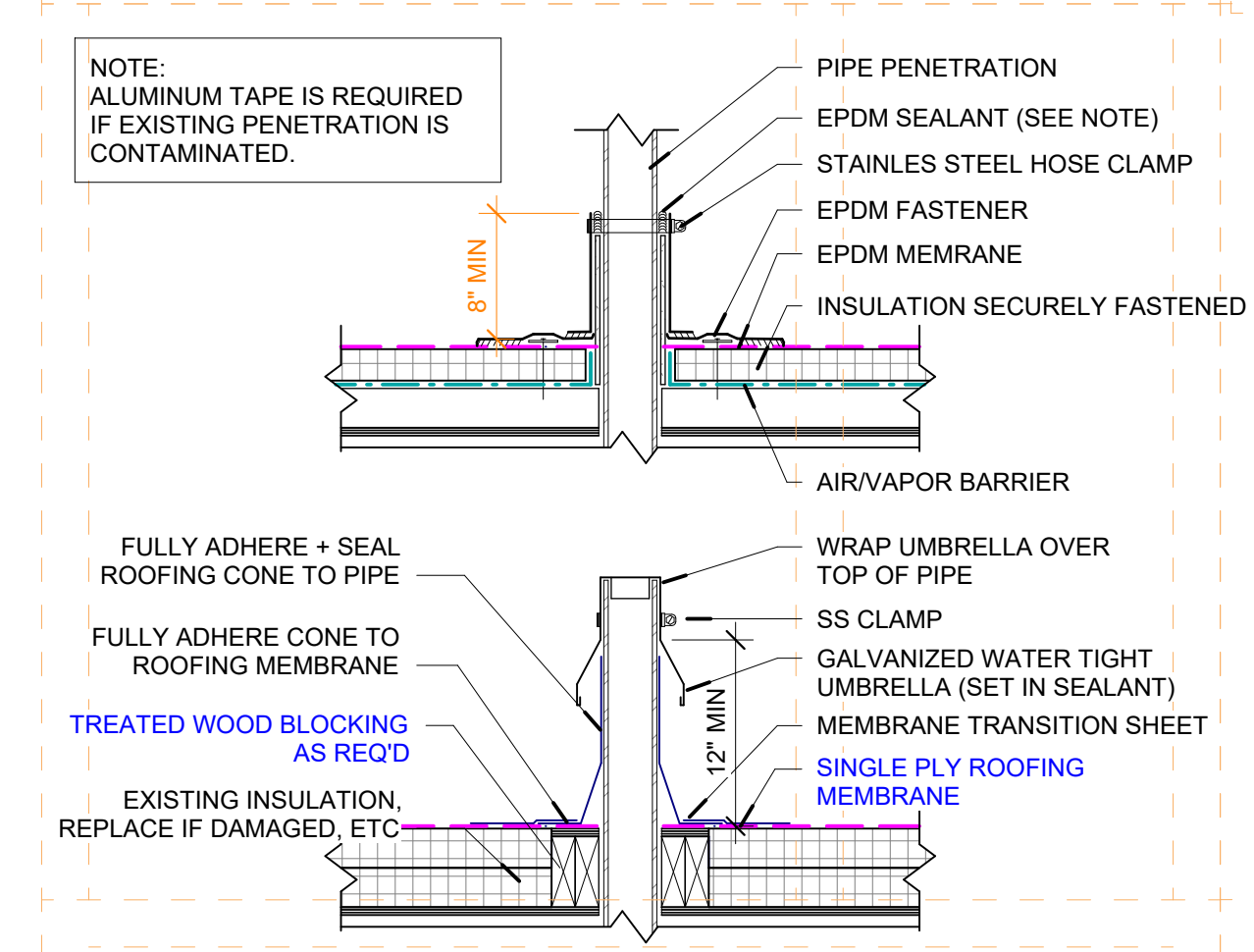
**10 VALLEY FLASHING**  
1 1/2" = 1'-0"



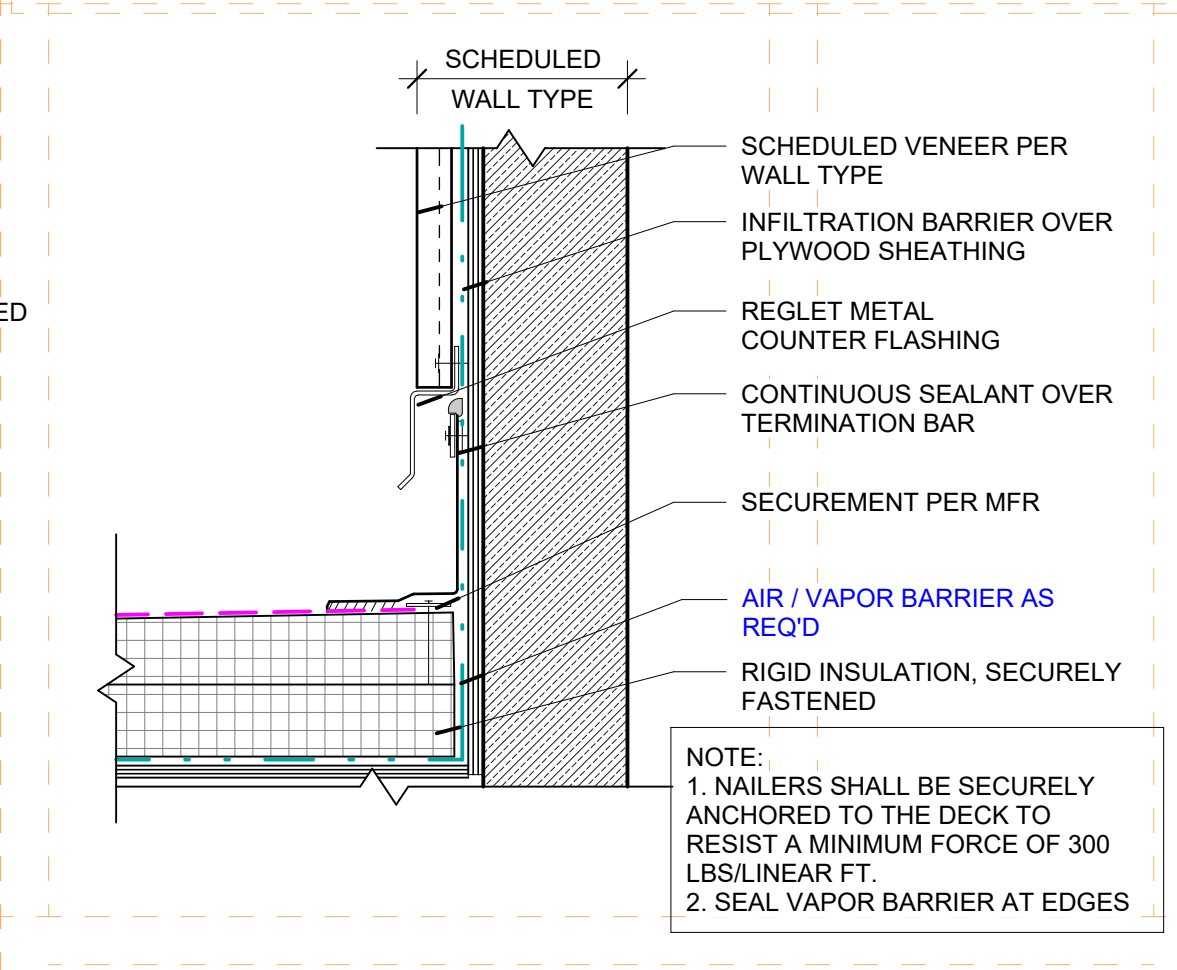
**1 HVAC EQUIPMENT FLASHING**  
1 1/2" = 1'-0"



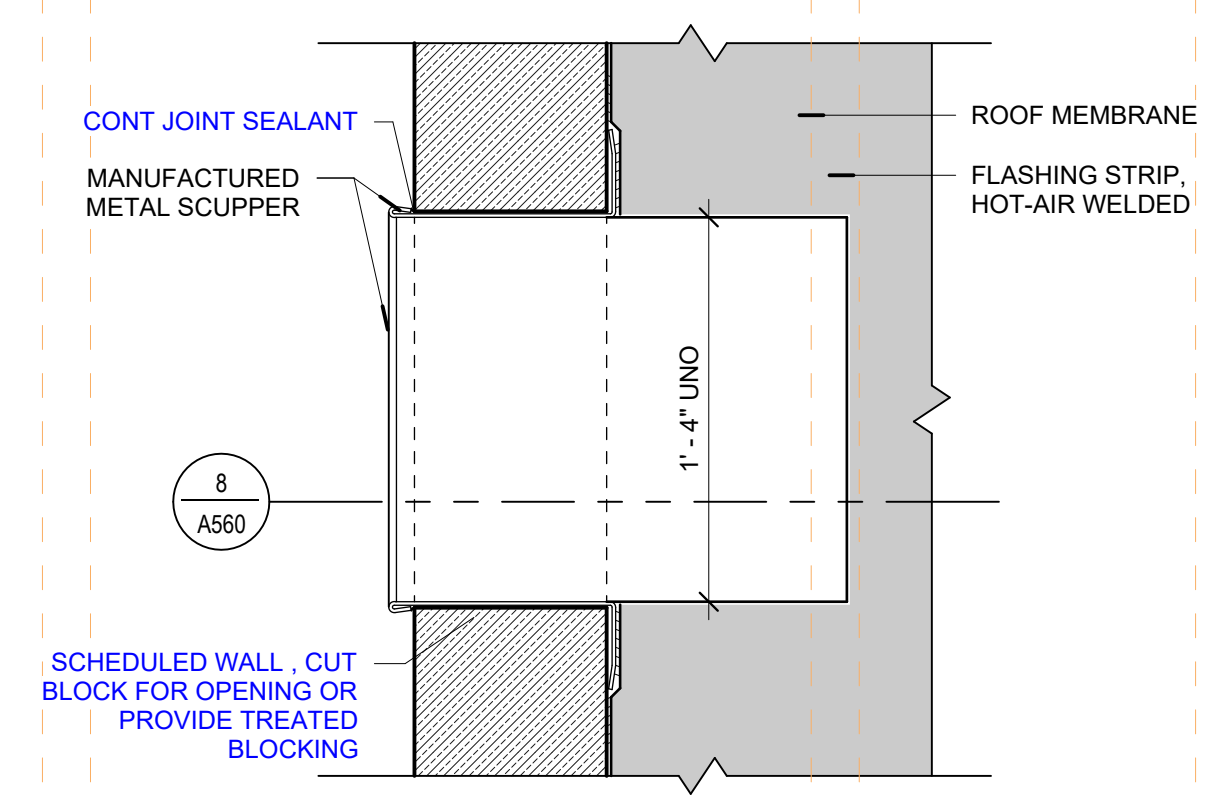
**4 ROOF RAILING FLASHING DETAIL**  
1 1/2" = 1'-0"



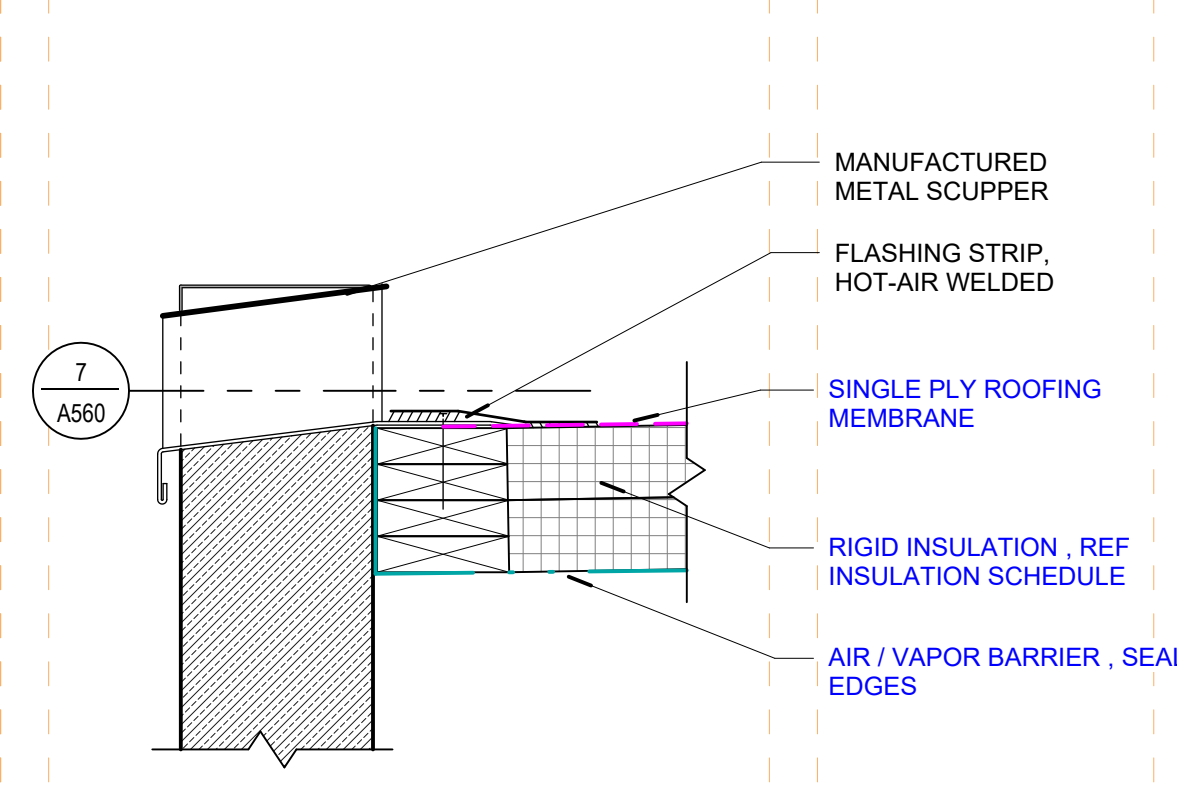
**3 ROOF - PENETRATION**  
1" = 1'-0"



**2 ROOF - MEMBRANE - @WALL**  
1 1/2" = 1'-0"



**7 SCUPPER - JAMB**  
1 1/2" = 1'-0"



**8 SCUPPER - PENETRATION**  
1 1/2" = 1'-0"

PUBLIC RELATIONS ROOF - USU

PUBLIC RELATIONS  
LOGAN, UT 84321  
PERMIT SET

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ROOF DETAIL

**A560**





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PUBLIC RELATIONS ROOF - USU

PUBLIC RELATIONS  
LOGAN, UT 84321  
CONSTRUCTION DOCUMENT SET

JOB NUMBER: 24265

OWNER: UTAH STATE UNIVERSITY

DATE: 12/18/2024

REV DATE DESCRIPTION

**SPECTRUM ENGINEERS**  
324 S. State St., Suite 400  
Salt Lake City, UT 84111  
800-678-7077  
801-328-5151  
fax: 801-328-5155  
www.spectrum-engineers.com

ELECTRICAL NARRATIVE

EE002

USU PR BUILDING RE-ROOF PROJECT

UNCOMMON ARCHITECTS PROJECT NUMBER: 24265

**ELECTRICAL SYSTEMS**

**CODES, STANDARDS, AND REFERENCE MATERIALS**

Codes, Standards, and Guidelines, which are applicable to the design of the electrical systems, are listed below. Comply with each of the latest adopted publications:

- ADA, Americans with Disabilities Act
- Division of Facilities Construction and Management (DFCM), Design Requirements
- Division of Facilities Construction and Management (DFCM), State Buildings Energy Standard
- Division of Facilities Construction and Management (DFCM), High Performance Building Standard
- Utah State University Design Standards
- International Energy Conservation Code (IECC) 2021 / ASHRAE 90.1 Energy Code
- EIA/TIA, Electronics Industries Association/Telecommunications Industry Association
- International Building Code (IBC)
- IESNA, Illuminating Engineering Society of North America
- NFPA, National Fire Protection Association (applicable sections including but not limited to):
  - NFPA 70, National Electrical Code 2020
  - NFPA 72, National Fire Alarm Code
  - NFPA 101, Life Safety Code
- UL, Underwriter's Laboratories
- Utah State University Fire Marshal Laws, Rules and Regulations

**Electrical Systems Responsibility Summary**

System Responsibility Matrix				
Date: 12/17/2024	Designed By	Furnished By	Installed By	Notes
<b>Power &amp; Lighting</b>	NIC	NIC	NIC	
Service Equipment Upgrade	NIC	NIC	NIC	
Power and Distribution	Design Team	Contractor	Contractor	
Roof Trace	Design Team	Contractor	Contractor	

**ELECTRICAL CONSTRUCTION DOCUMENTS CONTRACTOR AND DRAWINGS COORDINATION**

**CD Set**

Construction Documents (CD) means the overall design is at 100%.

Page E-1

USU PR BUILDING RE-ROOF PROJECT

UNCOMMON ARCHITECTS PROJECT NUMBER: 24265

**OWNER PROJECT REQUIREMENTS (OPR)**

**Project Drivers**

Provide electrical power systems that will meet campus standards and provide students and faculty the support they need.

**Project Goals**

- Provide a consistent and maintainable gutter de-ice and snow melt electrical system.

**Project Requirements**

- Provide gutter de-ice and snow melt system for the USU Public Relations Building that meets campus standards.
- Provide electrical systems that meet and exceed energy code requirements.
- Provide flexible, controllable systems for the USU facilities staff.

**BUILDING SERVICE AND DISTRIBUTION**

**Panelboards**

The existing building is provided with panelboards located in the hallway on level two that are currently serving heat trace circuits on the existing roof. Additionally, distribution panelboards will be provided in the new addition where required for new power distribution.

**Branch Circuits**

All branch circuit wiring shall be copper with a minimum of #12 AWG. Branch circuits will be loaded to no more than 80% of what is allowed by NFPA 70. Each 20A circuit shall supply no more than 125ft of de-icing heating cable. Each branch circuit homerun will have no more than 3 circuits per raceway. Dedicated neutrals for each phase conductor will be provided. All heat trace circuits will be supplied by 30mA GFCI breaker capable of being locked out in the open position.

**Conductors**

All conductors will be copper. Conductors for branch circuits will be sized to prevent voltage drop exceeding 3% at the farthest load. The total voltage drop on both feeders and branch circuits will not exceed 5%. Heating cables shall be rated for 120V minimum and shall have a Fluoropolymer or modified polyolefin outer jacket.

**Raceways**

All raceways are minimum 3/4" C. Conduit is not allowed to be embedded in concrete slabs. A 200lb. nylon pull string shall be provided in all empty conduits. Provide rigid metal conduit or intermediate metal conduit in areas where conduit is subject to damage.

**Grounding**

Branch circuit raceways will include an insulated equipment grounding conductor.

Page E-2

A3

ELECTRICAL NARRATIVE

SCALE: NTS

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EXISTING PANEL: "B"																		
VOLTS/PHASE/WIRE:			PANEL SIZE & TYPE:			MAIN SIZE AND TYPE:			FED FROM:	CABINET:	LOCATION:	NOTES:						
120/208V, 3 PH 4 WIRE			22" W x 6" D, BOLT-ON			150 AMPERE MAIN LUGS				RECESSED								
ACCESSORIES: PANEL DIRECTORY, IDENTIFICATION, GROUNDING BAR										AIC RATING: 22,000								
CKT NO	AMP	POLE	BKR	LOAD (kVA)			PHASE LOAD			DESCRIPTION	LOAD (kVA)			BKR	POLE	AMP	CKT NO	
				LTG	PWR	CO	A	B	C		CO	PWR	LTG					
1	20	1	--	0.0	0.0	0.0	0.9	1.0			OFFICE 306 OUTLETS	0.0	0.0	0.0	--	1	20	2
3	20	1	--	0.0	0.0	0.0		0.9	1.0		OFFICE 305 OUTLETS	0.0	0.0	0.0	--	1	20	4
5	20	1	--	0.0	0.0	0.0			0.9	1.0	OFFICE 304 OUTLETS	0.0	0.0	0.0	--	1	20	6
7	20	1	--	0.0	0.0	0.0	1.0	1.0			OFFICE 306 OUTLETS	0.0	0.0	0.0	--	1	20	8
9	20	1	--	0.0	0.0	0.0		1.0	1.0		OFFICE 305 OUTLETS	0.0	0.0	0.0	--	1	20	10
11	20	1	--	0.0	0.0	0.0			1.0	1.0	OFFICE 304 OUTLETS	0.0	0.0	0.0	--	1	20	12
13	20	1	--	0.0	0.0	0.0	1.0	1.0			CORRIDOR RRM OUTLETS	0.0	0.0	0.0	--	1	20	14
15	20	1	--	0.0	0.0	0.0		1.0	0.9		OFFICE 200 201 LIGHT	0.0	0.0	0.0	--	1	20	16
17	20	1	--	0.0	0.0	0.0			1.0	0.9	OFF 205 207 VLT LIGHT	0.0	0.0	0.0	--	1	20	18
19	20	1	--	0.0	0.0	0.0	0.8	1.0			ATTIC LIGHT/RECEPTACLES	0.0	0.0	0.0	--	1	20	20
21	20	1	--	0.0	0.0	0.0		0.0	0.8		PWR: HEAT TRACE SE	0.0	0.4	0.0	GF3	1	20	22
23	20	1	--	0.0	0.0	0.0			0.0	0.8	PWR: HEAT TRACE NE	0.0	0.4	0.0	GF3	1	20	24
25	20	1	--	0.0	0.0	0.0	0.0	0.0			SPARE	0.0	0.0	0.0	--	1	20	26
27	20	1	--	0.0	0.0	0.0		0.0	0.0		SPARE	0.0	0.0	0.0	--	1	20	28
29	20	1	--	0.0	0.0	0.0			0.0	0.0	SPARE	0.0	0.0	0.0	--	1	20	30
31	20	1	GF3	0.0	0.4	0.0	0.7	--			PWR: HEAT TRACE SW	0.0	0.0	0.0	--	1	--	32
33	20	1	GF3	0.0	0.7	0.0	--	1.0	--		PWR: HEAT TRACE NW	0.0	0.0	0.0	--	1	--	34
35	--	1	--	0.0	0.0	0.0	--	--	--	--	SPACE	0.0	0.0	0.0	--	1	--	36
37	--	1	--	0.0	0.0	0.0	--	--	--	--	SPACE	0.0	0.0	0.0	--	1	--	38
39	--	1	--	0.0	0.0	0.0	--	--	--	--	SPACE	0.0	0.0	0.0	--	1	--	40
41	--	1	--	0.0	0.0	0.0	--	--	--	--	SPACE	0.0	0.0	0.0	--	1	--	42
TOTALS:		CONNECTED KVA PER PHASE			8	8	7	CONNECTED TOTAL KVA =			23							
		CONNECTED AMPS PER PHASE			71	65	55	AVERAGE CONNECTED AMPS PER PHASE =			63							
NEC DIVERSIFIED LOAD CALCULATIONS																		
LIGHTING & CONTINUOUS LOADS:					- 100% CONNECTED LOAD PLUS 25%					DIVERSIFIED TOTAL KVA = 23								
RECEPTACLES:					- FIRST 10kVA @ 100%, REMAINDER @ 50%					AVERAGE AMPS PER PHASE = 63								
ALL OTHER LOADS @ 100%: 1.8 kVA					- MOTOR TOTALS INCLUDED IN ALL OTHER LOADS WITH LARGEST MOTOR CALCULATED @ 125% PER NEC													
BKR: GF=GF3, GF3=30mA GFCI CAPABLE OF BEING LOCKED OUT IN OPEN POSITION, IG=ISOLATED GROUND, AF=AF3, ST=SHUNT TRIP, RED=PROVIDE RED COLORED BREAKER, AF=ARC FAULT CURRENT INTERRUPTER, GA=COMBINATION OF GROUND FAULT AND ARC FAULT CIRCUIT INTERRUPTER, GS=COMBINATION OF SHUNT TRIP WITH GFCI																		
NOTES: HALFTONE ITALIC TEXT = EXISTING CIRCUIT PANEL TYPE: GE A-SERIES PANELBOARD; CAT. NO. AF43S ALL EXISTING LOADS ARE ESTIMATED TO THE GREATEST EXTENT POSSIBLE BY THE ENGINEER AND MAY VARY FOR ACTUAL CONDITIONS. HEAT TRACE CIRCUITS 22 AND 24 TO USE THE EXISTING GF3 BREAKERS. PROVIDE NEW "GF3" BREAKERS FOR HEAT TRACE CIRCUITS 31 AND 33.																		

- NOTES:
- IF THE DOWNSPOUT ENDS UNDERGROUND, THE HEATING CABLE SHOULD EXTEND INTO A HEATED AREA OR BELOW THE FROST LINE.
  - FOR LOW-WATER-FLOW SITUATIONS, TEEING THE HEATING CABLE SO THAT A SINGLE RUN GOES DOWN THE DOWNSPOUT IS USUALLY SUFFICIENT.
  - LEAVE DRIP LOOPS BELOW THE DOWNSPOUT AT BOTTOM.
  - ONLY A SINGLE RUN OF HEATING CABLE SHOULD BE USED UNLESS OTHERWISE DIRECTED BY OWNER. THE END SEAL SHOULD BE LOOPED BACK UP AT LEAST 12 INCHES INSIDE THE DOWNSPOUT.

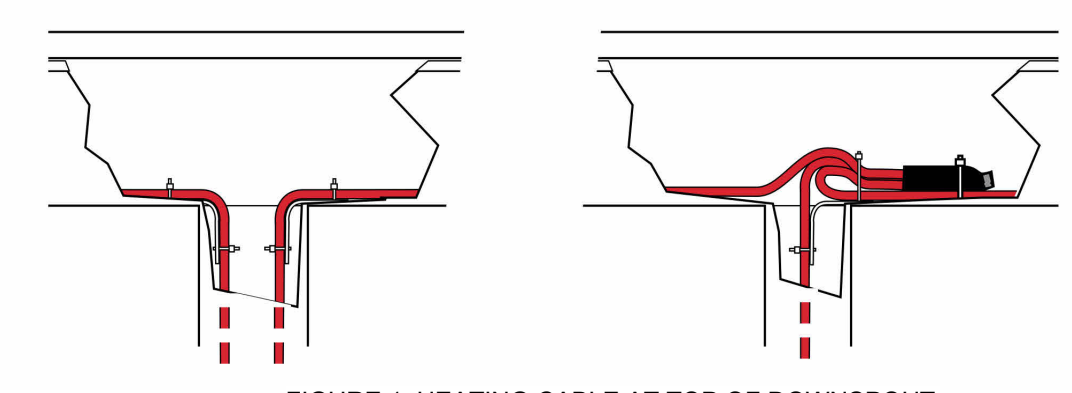


FIGURE 1: HEATING CABLE AT TOP OF DOWNSPOUT

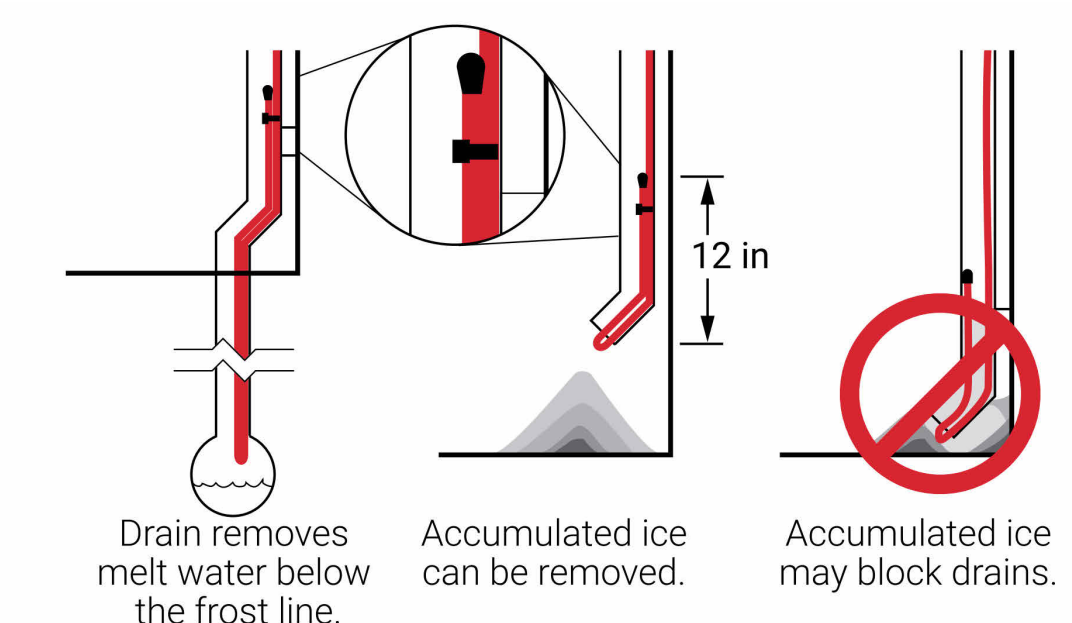
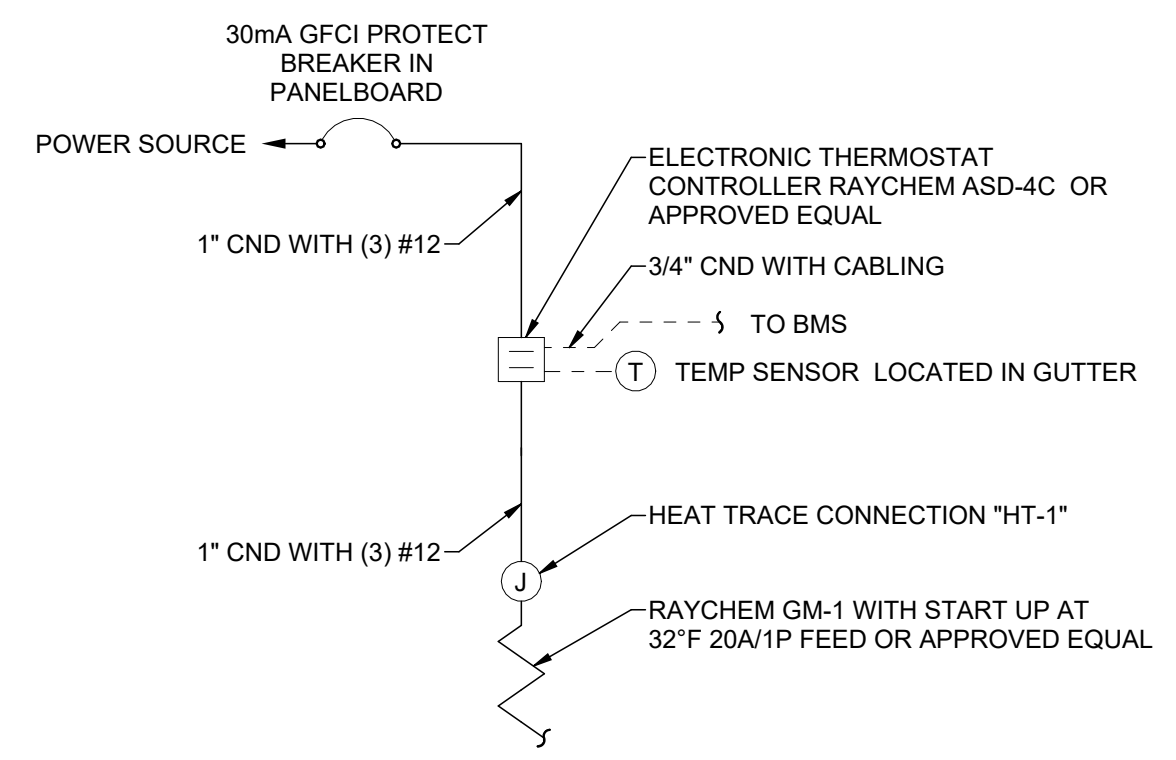


FIGURE 2: HEATING CABLE AT BOTTOM OF DOWNSPOUT



NOTE:  
1. PROVIDE ALL REQUIRED PARTS AND HARDWARE FOR A COMPLETE AND WORKING SYSTEM

MAXIMUM CIRCUIT LENGTH IN FEET (METERS)

	Start-up temperature	Circuit breaker size			
		15 A	20 A	30 A	40 A*
GM-1XT and GM-1X at 120 volts	32°F (0°C)	100 (30)	135 (41)	200 (61)	--
	20°F (-7°C)	95 (29)	125 (38)	185 (56)	200 (61)*
	0°F (-18°C)	80 (24)	100 (30)	155 (47)	200 (61)*

B4 TYPICAL HEAT TRACE - MAX. CIRCUIT LENGTH  
SCALE: 1/4" = 1'-0"

- NOTES:
- USE ONE RUN OF HEATING CABLE IN THE GUTTER.
  - NO ATTACHMENT TO GUTTER IS NORMALLY REQUIRED.
  - CONTINUE HEATING CABLE DOWN THE INSIDE OF THE DOWNSPOUT.

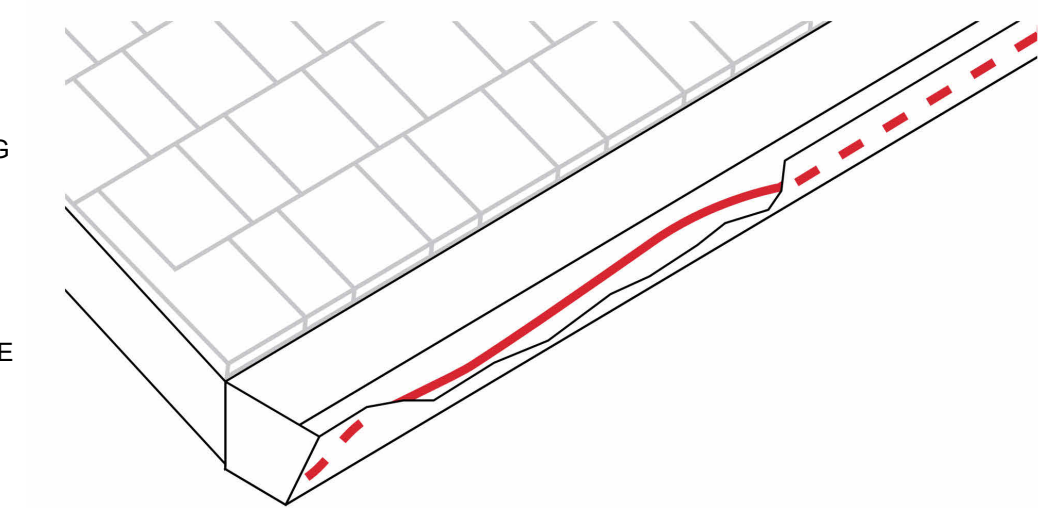
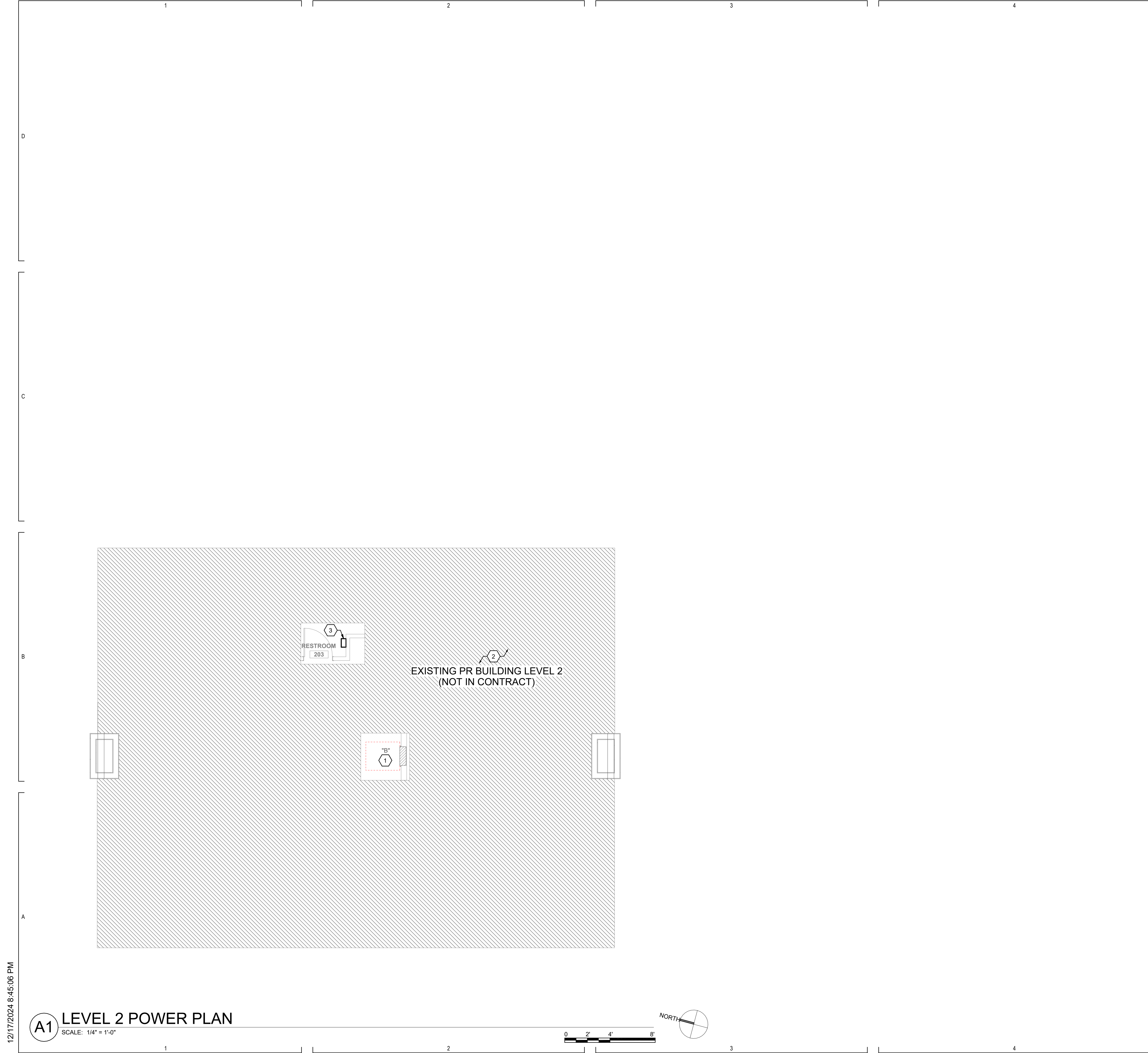


FIGURE 1: LAYOUT IN STANDARD GUTTERS

A1 TYPICAL HEAT TRACE - DOWNSPOUTS  
SCALE: NTS

A3 HEAT TRACE RISER  
SCALE: NTS

A4 TYPICAL HEAT TRACE - GUTTERS  
SCALE: NTS



**A1** LEVEL 2 POWER PLAN  
SCALE: 1/4" = 1'-0"

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**GENERAL SHEET NOTES**

- 1 ALL ELECTRICAL PENETRATIONS THROUGH CMU, FOUNDATION, CONCRETE OR STRUCTURAL WALLS SHOULD BE CHECKED FOR REBAR AND ALL PENETRATIONS SHALL AVOID CUTTING THROUGH REBAR.
- 2 ALL WORK SHALL BE DONE ACCORDING TO THE NATIONAL ELECTRICAL CODE (2023 NEC), IBC, NFPA, AND IFC. COMPLIANCE AND FINAL APPROVAL IS SUBJECT TO THE ON SITE FIELD INSPECTION OF THE AHJ.
- 3 CONTRACTOR SHALL UPSIZE BRANCH CIRCUITS AND FEEDERS FOR VOLTAGE DROP BASED ON ACTUAL INSTALLED LENGTHS.
- 4 PROVIDE DEDICATED NEUTRAL FOR ALL BRANCH CIRCUITS.
- 5 CONTRACTOR SHALL COORDINATE ELECTRICAL NEEDS WITH APPROVED SUBMITTALS FOR ALL EQUIPMENT PRIOR TO ROUGH-IN AND RELEASE OF ASSOCIATED ELECTRICAL EQUIPMENT. ADJUST CIRCUITS TO MEET REQUIREMENTS OF APPROVED SUBMITTALS AS REQUIRED.
- 6 CONTRACTOR SHALL UPDATE ALL NEW AND EXISTING PANEL SCHEDULES WITH NEW CIRCUIT DATA. SCHEDULE SHALL BE ON A CARD STOCK TYPE MATERIAL AND TYPED WITH THE UPDATED INFORMATION.

**SHEET KEYNOTES**

- 1 PANEL "B" LOCATED IN APPROXIMATE LOCATION. CONTRACTOR TO FIELD VERIFY EXACT LOCATION PRIOR TO WORK.
- 2 PROJECT AREA IS IN SCOPE AS REQUIRED FOR ROUTING CONDUIT FROM PANEL "B" TO HEAT TRACE CIRCUITS LOCATED ON ROOF.
- 3 ELECTRONIC SNOW MELT CONTROLLER (RAYCHEM ASD-4C OR APPROVED EQUAL). CONTROLLER LOCATION IS SHOWN APPROXIMATE. EXACT LOCATION SHALL BE COORDINATED WITH OWNER PRIOR TO INSTALL.



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**PUBLIC RELATIONS ROOF - USU**

PUBLIC RELATIONS  
LOGAN, UT 84321  
CONSTRUCTION DOCUMENT SET

JOB NUMBER: 24265  
OWNER: UTAH STATE UNIVERSITY  
DATE: 12/18/2024

**SPECTRUM ENGINEERS**  
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800-678-7077  
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LEVEL 2 POWER PLAN

**EP102**

## GENERAL SHEET NOTES

- ALL ELECTRICAL PENETRATIONS THROUGH CMU, FOUNDATION, CONCRETE OR STRUCTURAL WALLS SHOULD BE CHECKED FOR REBAR AND ALL PENETRATIONS SHALL AVOID CUTTING THROUGH REBAR.
- ALL WORK SHALL BE DONE ACCORDING TO THE NATIONAL ELECTRICAL CODE (2023 NEC), IBC, NFPA, AND IFC. COMPLIANCE AND FINAL APPROVAL IS SUBJECT TO THE ON SITE FIELD INSPECTION OF THE AHJ.
- CONTRACTOR SHALL UPSIZE BRANCH CIRCUITS AND FEEDERS FOR VOLTAGE DROP BASED ON ACTUAL INSTALLED LENGTHS.
- PROVIDE DEDICATED NEUTRAL FOR ALL BRANCH CIRCUITS.
- CONTRACTOR SHALL COORDINATE ELECTRICAL NEEDS WITH APPROVED SUBMITTALS FOR ALL EQUIPMENT PRIOR TO ROUGH-IN AND RELEASE OF ASSOCIATED ELECTRICAL EQUIPMENT. ADJUST CIRCUITS TO MEET REQUIREMENTS OF APPROVED SUBMITTALS AS REQUIRED.
- CONTRACTOR SHALL UPDATE ALL NEW AND EXISTING PANEL SCHEDULES WITH NEW CIRCUIT DATA. SCHEDULE SHALL BE ON A CARD STOCK TYPE MATERIAL AND TYPED WITH THE UPDATED INFORMATION.

## SHEET KEYNOTES

- ALL EXISTING HEAT TRACE LOCATED ON THE ROOF, GUTTERS, OR DOWNSPOUTS ARE TO BE DEMOLISHED PRIOR TO ROOF DEMO.
- EXISTING CAMERA TO BE DISCONNECTED AND SALVAGED DURING DEMOLITION OF ROOF THEN RE-CONNECTED AFTER NEW ROOF IS INSTALLED. COORDINATE WITH USU I.T. GROUP FOR REMOVAL OF CAMERA DURING CONSTRUCTION.
- HEAT TRACE TO BE INSTALLED IN GUTTERS AND DOWNSPOUTS. EACH INDIVIDUAL HEAT TRACE CIRCUIT SHALL BE NO LONGER THAN 125FT. REFER TO LAYOUT DETAILS ON EE501 FOR INSTALLATION LAYOUT INFORMATION. COORDINATE WITH HEAT TRACE MANUFACTURER FOR INSTALLATION INSTRUCTIONS.



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PUBLIC RELATIONS ROOF - USU

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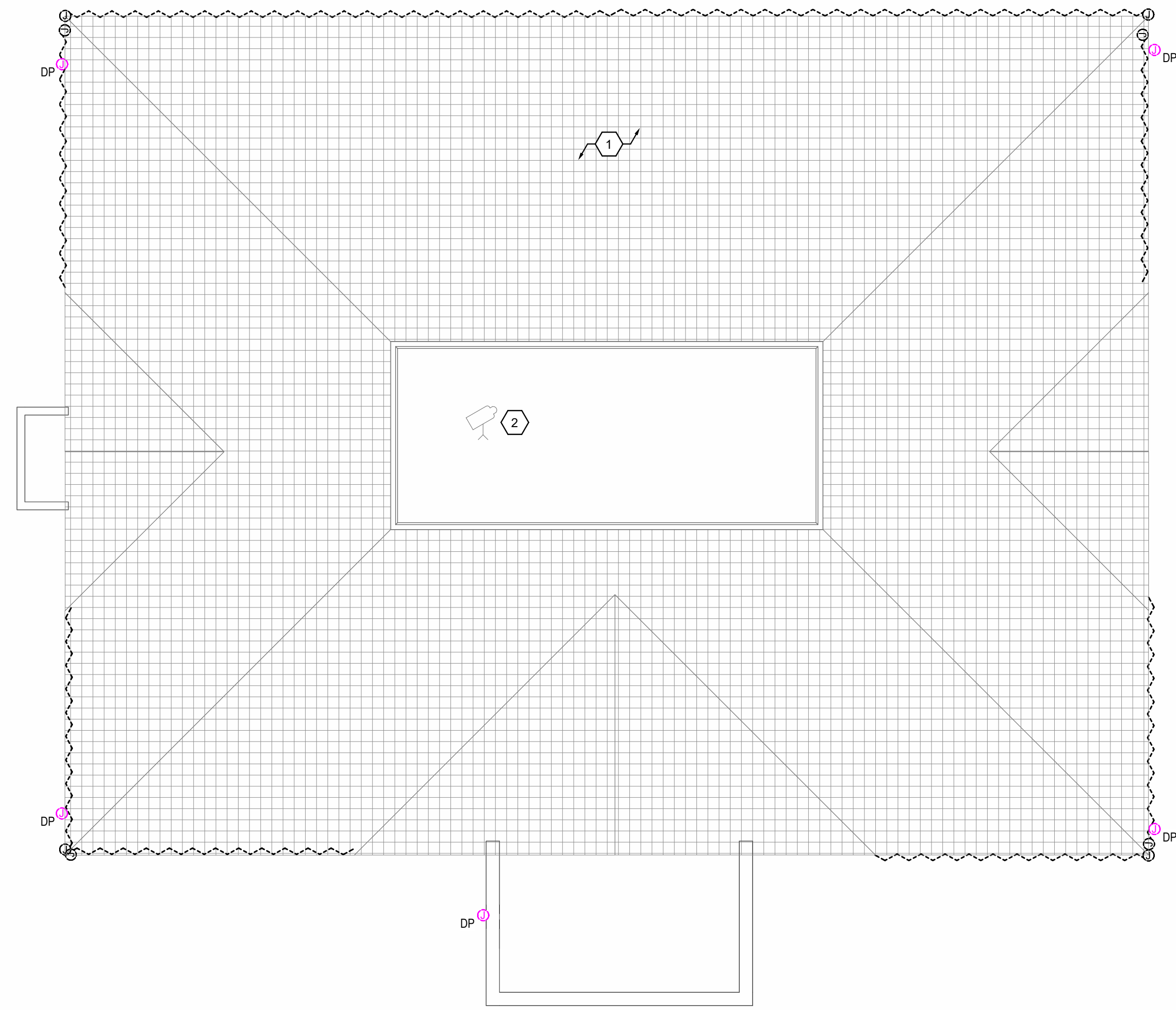
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ROOF POWER PLAN

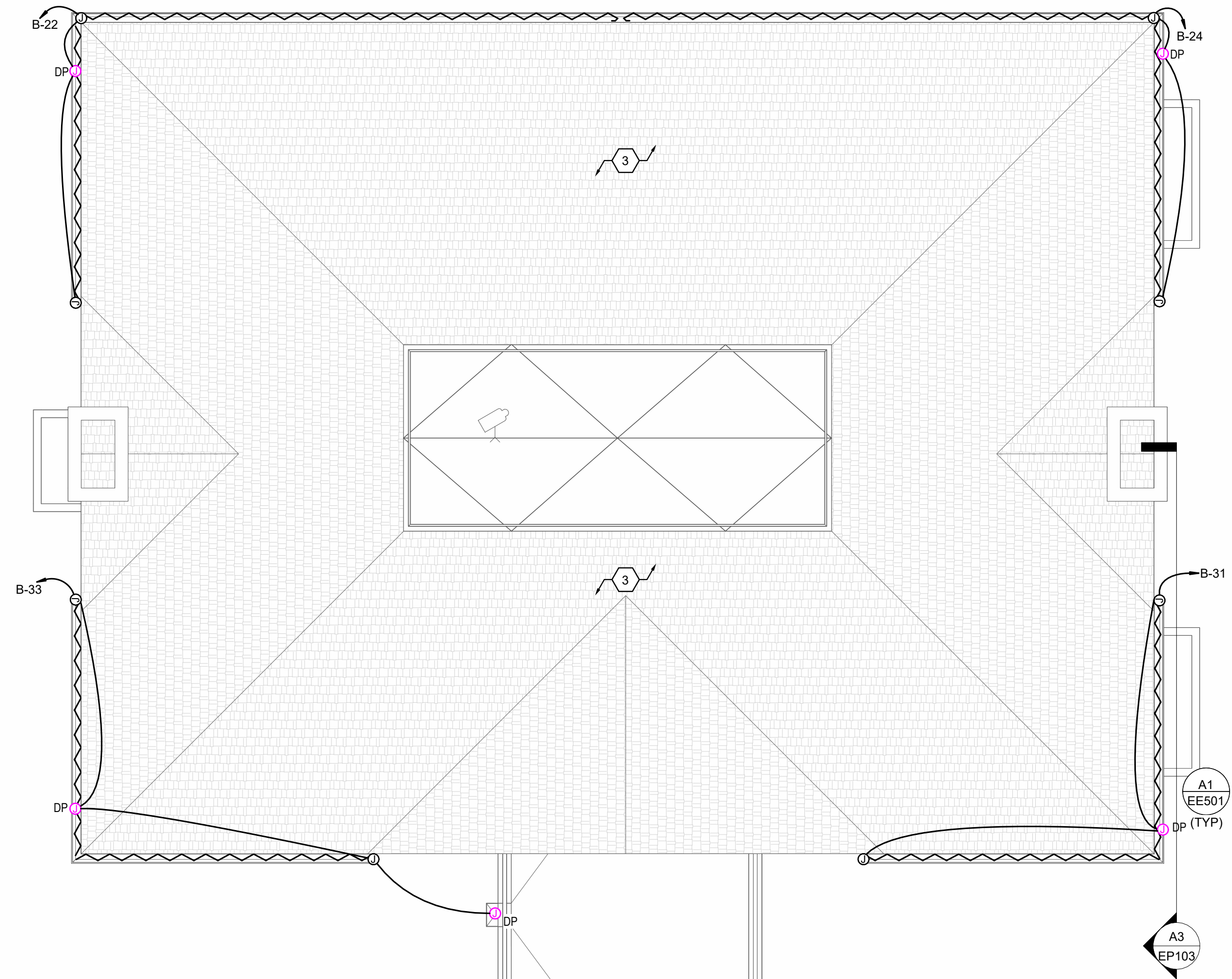
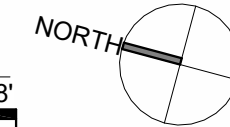
**EP103**



**C1** ROOF ELECTRICAL DEMOLITION PLAN

SCALE: 1/4" = 1'-0"

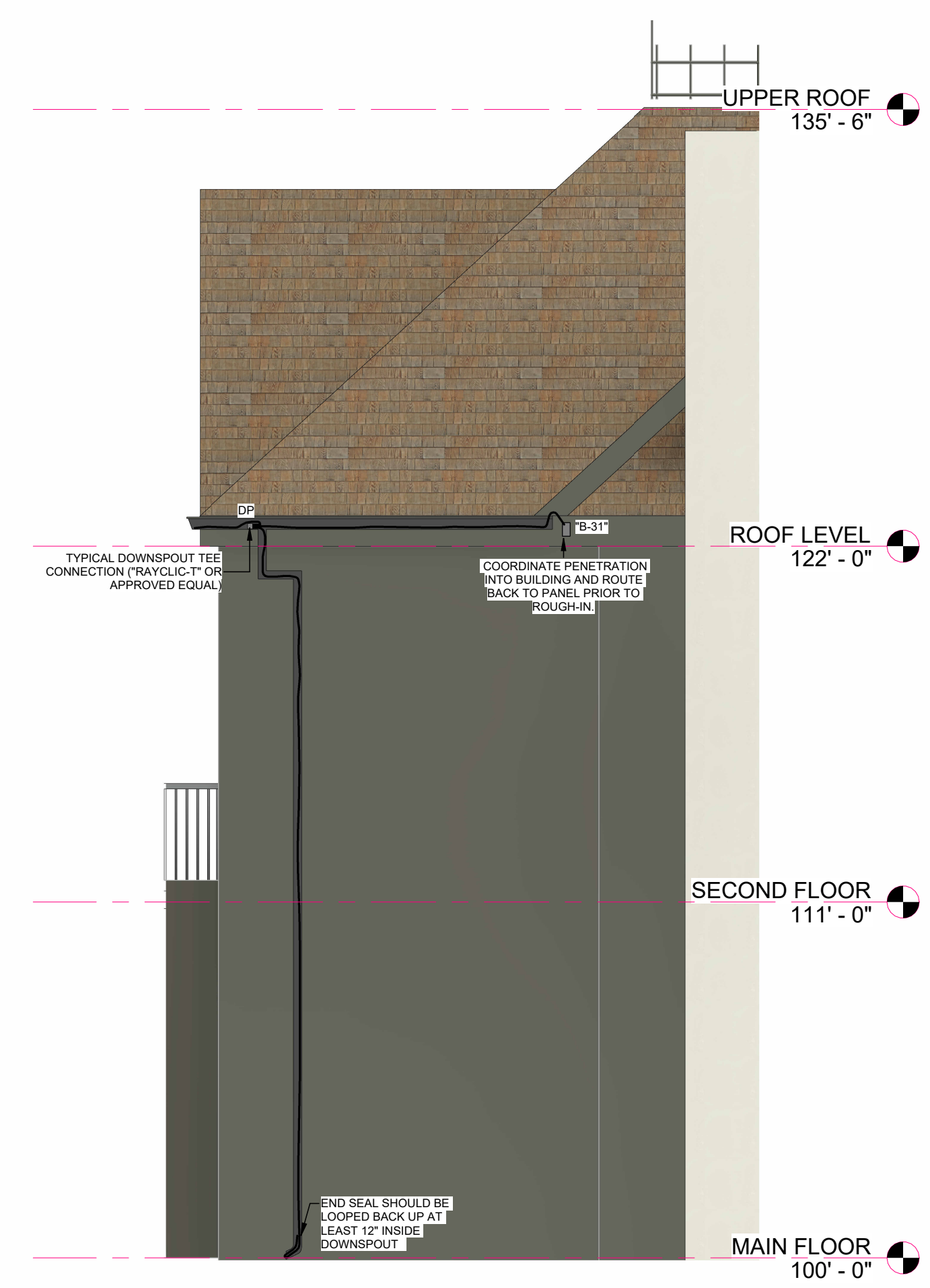
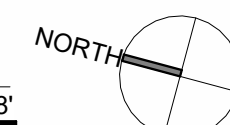
0 2' 4' 8'



**A1** ROOF POWER PLAN

SCALE: 1/4" = 1'-0"

0 2' 4' 8'



**A3** HEAT TRACE ELEVATION - SOUTH WEST

SCALE: 1/4" = 1'-0"

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